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November 1996 Issue 174 £3.25
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FOR ACORN RISC COMPUTERS



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contents

Editor's letter

Unless you've just arrived from Mars you'll no doubt be aware that the Acorn World show is the happening thing at the beginning of November.

In this issue we're providing the most up-to-date guide to whose there and what they'll be showing at the new Olympia venue.

In the interviews and chats we've had with the Acorn staff it's clear that they're just as excited about the show as the rest of us and it does promise to be packed with amazing new products — and I don't just mean the StrongARM.

Battle has been joined in the video editing arena with Eidos wading back into the fray with the StrongARM power and Irlam's fantastic quality Videodesk system — offline video editors have only two decent low-cost choices and they're both Acorn.

If we take all the niches there'll be nowhere for our opponents to retreat to when the Net Computer hits them from the front.

What did you do in the web-war?

Steve Turnbull

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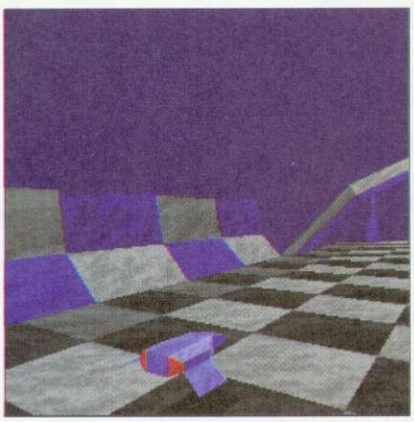
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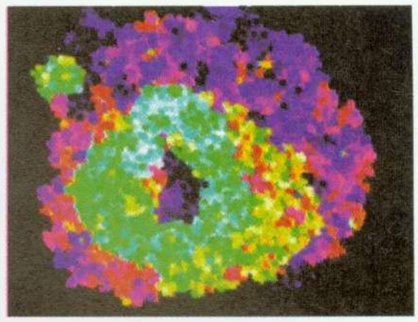
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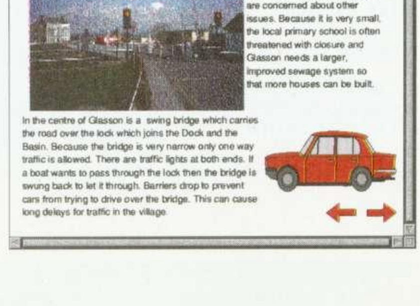


HANDS ON



EDUCATION





November 1996

REVIEWS





Everything you need to know to plan your visit to Acorn World. Includes a stand-by-stand guide, floor plan and theatre program details.

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Acorn WORLD

FEATURES

PLUS! Special Acorn World subscription offer

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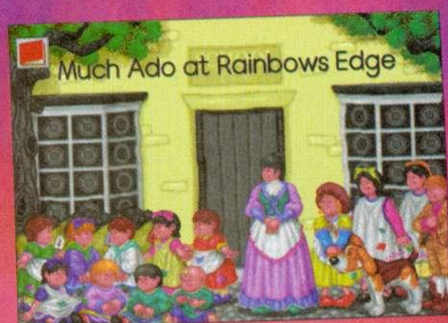
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Play the demo of the fast action game Inferno. There's also a Processor Vector Module, Flashback music player, IBrowse – a Sprite and JPEG viewer – plus all the regulars.



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StrongARM is here! Mike Cook talks to Chris Cox and Dave Walker from ART.



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Geoff Preston visits RESOURCE to preview their latest project which involves nursery rhymes and lots of celebrities.

Next month in Acorn User

Printer reviews, Prosound review, SCSI vs IDE and all the regular items are just the tip of iceberg as we kick off our December issue with a new series on creating arcade action games by creator of *Swarm* Matthew Bloch. Plus a detailed feature on the inter-application protocol from Clares. Don't miss it!

NEXT ISSUE
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Impression Style Resource Disc	DEC_dATA	£12.93	£11
Impressive	Quantum	£14.10	£12
Interdictor 2	Clares	£18.80	£16
InterTalk	Acorn	£91.65	£78
InterTalk site licence	Acorn	£346.63	£295
Investigator IV (not Risc PC)	VTI	£49.35	£42
James Pond 2 + (not Risc PC)	Eclipse	£19.98	£17
James Pond - Underwater Agent / Running Water, KS1-4	SkillsW	£32.90	£28
Junior Database, KS1-3	Iota	£52.88	£45
Junior PinPoint, KS1,2	Longman	£35.25	£30
Junior Sibelius! KS1,2	Sibelius	£56.40	**£48**
Jurassic Clipart	Micro S	£17.63	£15
Key Author	Anglia	£63.45	£54
Keynote 2.0	Anglia	£31.73	£27
Key Plus 3.0	Anglia	£69.33	£59
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Kid Pix, KS1,2	ESM	£31.73	£27
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Landmarks - Columbus, KS2,3	Longman	£30.55	£26
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Landmarks Datafile Britain Since 1930, KS2,3	Longman	£16.45	£14
Landmarks Datafile Looking at the World, KS2,3	Longman	£16.45	£14
Landmarks Microworlds - The Victorians, KS2,3	Longman	£30.55	£26
Logic Gates & Counters, KS2,3	Camboard	£14.10	£12
Look! Hear! Talking Topics (set of 6), age 5-7	Sherston	£64.63	£55
Lotus Turbo Challenge 2 (not Risc PC)	Krisalis	£21.15	£18
LRTV	Longman	£30.55	£26
MacFS	CC	£99.88	£85
MacFS Light	CC	£52.88	£45
Magic Maths	Creative	£29.38	£25
Magnetoids	Oregan	£23.50	£20
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Masterfile 3	Beebug	£52.88	£45
Mathematics Through WinLogo, KS3	Longman	£35.25	£30
MathMania, KS2-4	Topolog	£28.20	£24
Mathsbook	Topolog	£28.20	£24
Maths Card	Creative	£56.40	£48
Maths Circus, KS1-3	4Mation	£29.38	£25
Maths Odyssey	Comp Tut	£47.00	£40
Merp / Mirror Image	TBA	£19.98	£17
Midi Box	Topolog	£28.20	£24
Midi Synthesizer (needs 16-bit sound)	ESP	£44.65	£38
Mission: Control - Crystal Rain Forest 2 FD, age 7-11	Sherston	£50.53	£43
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Music Box, KS1,2	Topolog	£37.60	£32
Music Studio 32	Longman	£96.35	**£82**
My World 2	SEMERC	£44.65	£38
Naughty Stories Volume 1 (set of 6) FD, age 5-7	Sherston	45.83	£39
Naughty Stories Volume 1 Books, age 5-7	Sherston	£14.00 VO	£14
Naughty Stories Volume 2 (set of 6) FD, age 5-7	Sherston	45.83	£39
Navigator, KS2-4	Topolog	£39.95	£34
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New Teddy Bears' Picnic, KS1	Sherston	36.43	£31
NightSky	Clares	£71.67	£61
Noot, age 4-12	4Mation	£48.18	£41
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Nstore 4D	H.S.	£43.48	£37
Numbertime, KS1	Longman	£30.55	£26
Oak PCB II	Oak	£77.55	£66
Occasion	ExpLAN	£68.15	£58
Oh No! More Lemmings (requires Lemmings)	Krisalis	£17.63	£15
OmniClient	Acorn	1145.63	£975
Orrery	Spacetech	£69.33	£59
Ovation Pro	Beebug	£191.53	**£163**
Ovation Resource Disc	DEC_dATA	£9.40	£8
Oxford Reading Tree Stage 2 More Talking Stories A, age 5-7	Sherston	£41.13	£35
Oxford Reading Tree Stage 2 Story Books, age 5-7	Sherston	£9.00	VO £9
Oxford Reading Tree Stage 2 Talking Stories FD, age 5-7	Sherston	£41.13	£35
Oxford Reading Tree Stage 2 Wrens Talking Stories, age 5-7	Sherston	£45.83	£39
Oxford Reading Tree Stage 3 More Talking Stories A, age 5-7	Sherston	£41.13	£35
Oxford Reading Tree Stage 3 Story Books, age 5-7	Sherston	£9.00	VO £9
Oxford Talking Infant Atlas FD, KS1	Sherston	£22.33	£19
Parish Magazine Clip Art Collection	DEC_dATA	£18.80	£16
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Photodesk v2	Spacetech	267.90	£228

Product	Supplier	Inc. VAT	Ex. VAT
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PinPoint 2, KS3,4	Longman	£92.83	£79
PinPoint Datafile Animal Kingdom, KS2,3	Longman	£16.45	£14
PinPoint Datafile Diet and Nutrition, KS3,4	Longman	£16.45	£14
PinPoint Datafile Second World War, KS3,4	Longman	£16.45	£14
PinPoint Datafile Solar System, KS3,4	Longman	£16.45	£14
Placard	ICS	£11.75	£10
Plantwise FD, age 9-14	Sherston	£49.35	£42
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Plot	Clares	£74.03	£63
Podd, KS1,2	ESM	£22.33	£19
Prehistoric Animals Graphics	Micro S	£17.63	£15
Primary Teachers Clip Art Starter Set	DEC_dATA	£15.28	£13
PrimeSolver Full version, KS1-4	Minerva	£57.58	£49
ProArtisan 24 (Risc PC only)	Clares	98.70	£84
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Prophet 2	Apricote	£168.03	£143
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Rainbow, KS1,2	Longman	£35.25	£30
Real McCoy 4	Fourth	£25.85	£22
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Rhapsody 2	Clares	£56.40	£48
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Ridiculous Rhymes FD, age 7+	Sherston	£45.83	£39
RISC OS 3 First Steps	Dabs	£7.00	V0£7
RISC OS 3 Programmer's Reference Manual vol 1-4	Acorn	£105.00	V0£105

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ArtWorks Made Easy Budget DTP C Guide Graphics on the ARM Machines Impression Risc OS 3 First Steps	ArtWorks • Big Picture C/C++ • Easy C (++) Impression Style Impression Publisher (Plus) Pendown • Photodesk ProArtisan 2 or 24 Textease Risc OS 3.1 upgrades

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RISC OS 3.1 Documentation	Acorn	£32.90	£28
RISC OS 3.6 Programmer's Reference Manual vol 5a	Acorn	£35.00	V0£35
Risc PC Technical Reference Manual	Acorn	£55.00	V0£55
Roll VT	Paragon	£24.68	£21
Rosie and Jim: Duck loses his Quack, age 3-6	Sherston	£11.75	**£10**
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S-Base 2 Personal	Longman	£55.23	£47
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ScreenTurtle, KS1-3	Topolog	£39.95	£34
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SecureIT-Plus	Cambs Soft	£34.08	£29
Seelinks - Ourselves, KS1,2	ESM	£31.73	£27
Serenade	Clares	£88.13	£75
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ShapeFX	Data Store	£10.58	£9
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Sim City limited offer	Krisalis	£23.50	**£20**
Sim City 2000 for A5000, limited offer	Krisalis	£29.38	£25
Sim City 2000 for Risc PC limited offer	Krisalis	£29.38	**£25**
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smArt Fashion	4Mation	£17.63	£15
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smArt Homes: English	4Mation	£17.63	£15
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Spelling week-by-week, KS2	Chalksoft	£28.20	£24
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Star Fighter 3000	FedNet	£27.03	£23
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StartWrite	Icon	£64.63	£55
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TechWriter	Icon	£169.20	£144
TechWriter Professional	Icon	£224.43	£191
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Termite Internet	Doggy	£92.83	**£79**
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Time Traveller - Britain Since 1930, KS2	ESM	£31.73	£27
Time Traveller - The Victorians, KS2	ESM	£31.73	£27
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TopModel	Spacetech	115.15	£98
Topographer	Clares	£69.33	£59
Touch Type	Iota	£44.65	£38
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TurboDriver Canon	CC	£45.83	£39
TurboDriver Epson Stylus 800	CC	£45.83	£39
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Twain Canon IX incl Scan-Light Professional	Pilling	£18.80	£16
Twain Epson GT8000, 6500	Pilling	£18.80	£16
Twain HP Scanjet II, IIc, IIcx	Pilling	£18.80	£16
TWO (Task and Window Organiser)	ICS	£11.75	**£10**
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Vector, age 9+	4Mation	£68.15	£58
VersaTile	Longman	£47.00	£40
Virtual Golf	Fourth	£25.85	£22
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Wardrobe, KS1	Topolog	£19.98	£17
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What Do You Know?, age 4+	Cambs Soft	£22.33	£19
WinLogo, KS1-4	Longman	£84.60	£72
World Geography Maps	Micro S	£28.20	£24
World Wildlife Graphics	Micro S	£17.63	£15
WorraCad	Oak	£76.38	£65
Worst Witch, age 7-10 (not Risc PC)	Sherston	£28.20	£24
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IDE CD Interface for Archimedes	ICS	£68.15	£58
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Hard Disc Cradle Kit for Archimedes	ICS	£17.63	£15
Hard Disc Fitting Kit for A3000	ICS	£8.23	£7
Hard Disc Fitting Kit for A3020	ICS	£8.23	£7
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Risc PC700 10M HD1GB 4x CD 14" Monitor		1878.83	£1599
Risc PC700 10M HD1GB 4x CD 17" Monitor		2231.33	£1899
Cx 5x86-100 Card for Risc PC	Aleph	464.13	£395
Ergo Keyboard for Risc PC	Castle	£44.65	£38
Power-tec SCSI II Card for Risc PC	Alsystems	204.45	£174
Risc PC 1 - 2 Mb VRAM Upgrade	Atomwide	£111.63	£95
Risc PC 2 Mb VRAM	Acorn	£229.13	£195
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Risc PC Sound Card	Acorn	£68.15	£58
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Risc PC x86 Card DX2-66	Acorn	£291.40	£248
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SIMM 8 Mb 32 bit		57.58	£49
SIMM 16 Mb 32 bit		104.58	£89
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A7000 4M HD540 4x CD	Acorn	1173.83	£999
Auto-Scan 1438 Monitor (14") AKF 50 alternative	Microvitec	£299.63	£255
Auto-Scan 1450 Monitor (14") AKF 60 alternative	Microvitec	£229.13	£195
Backplane, 4-slot 4-layer with fan	IFEL	£64.63	£55
ColorMobile Direct Scanner for Windows	Primax	£175.08	£149
ColorMobile Office Scanner for Windows	Primax	£233.83	£199
DeskTV Entry level	Yellowstone	£192.70	£164
DeskTV Standard (with Tuner)	Yellowstone	£232.65	£198
DMI 30	Audio	£106.93	£91
DMI 50 - S	Audio	£192.70	£164
Ergo Keyboard	Castle	£115.15	£98
Ethernet Interface, A400 10base2+T Access+	Atomwide	£116.33	£99
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GamesPad Dual	GamesW	£35.25	£30
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GT-5000 A4 Colour Flatbed Scanner (parallel port)	Epson	£410.08	£349
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PD Cartridge, 650 Mb Rewritable	Panasonic	£44.65	£38
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PowerWAVE 50XG	Audio	£292.58	£249
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RISC OS 3.1 Software Upgrade with documentation	Acorn	£78.73	£67
RISC OS 3.1 Software Upgrade without documentation	Acorn	£45.83	£39
ScanLight 256	CC	£150.40	£128
ScanLight 256 for A3000/3010/3020/A4000	CC	£162.15	£138
ScanLight Video 256 A310/400/5000/Risc PC	CC	£220.90	£188
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Sportster Vi 14.4	US Robotics	£112.80	£96
Sportster Vi 28.8	USR	£179.78	£153
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User Port Analogue / MIDI for A5000, Risc PC	Acorn	98.70	£84
Vision 24 A3000/3010/3020/4000 internal	HCCS	102.23	£87
Vision 24 A5000/400/300/Risc PC	HCCS	102.23	£87
Vision 24 508 line A3000/3010/3020/4000 internal	HCCS	136.30	£116
Vision 24 508 line A5000/400/300/Risc PC	HCCS	136.30	£116
Vision Master Colour Monitor 15"	iiyama	295.00	£295
Vision Master Colour Monitor 17"	iiyama	545.00	£545
Vision Master Colour Monitor 17" Pro	iiyama	645.00	£645
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Wizzo5 for A5000	ICS	£45.83	£39

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Product	Supplier	Inc. VAT	Ex. VAT
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A3000 1 - 2 Mb, Upgradable	IFEL	£61.10	£52
A3000 1 - 4 Mb	IFEL	£111.63	£95
A3010 1 - 2 Mb	IFEL	£44.65	£38
A3010 4 Mb	IFEL	92.83	£79
A3020 / A4000 2 - 4 Mb	IFEL	£86.95	£74
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Product	Supplier	Inc. VAT	Ex. VAT
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BJ-30 Bubble Jet Printer (White)	Canon	£162.15	£138
BJC-70 Colour Bubble Jet Printer (Black)	Canon	£210.33	£179
BJC-70 Colour Bubble Jet Printer (White)	Canon	£210.33	£179
BJC-210 Colour Bubble Jet Printer	Canon	£175.08	**£149**
BJC-610 Colour Bubble Jet Printer	Canon	£421.83	£325
BJC-6xx Ink Cartridge, Black High Capacity	Canon	14.10	£12
BJC-6xx Ink Cartridge, Cyan	Canon	11.75	£10
BJC-6xx Ink Cartridge, Magenta	Canon	11.75	£10
BJC-6xx Ink Cartridge, Yellow	Canon	11.75	£10
BJC-4100 Colour Bubble Jet Printer	Canon	£233.83	**£199**
BJC-4xxx Cartridge, Colour	Canon	£47.00	£40
BJC-4xxx Cartridge, Black	Canon	£30.55	£26
BJC-4xxx Ink Tank, Black	Canon	£10.58	£9
BJC-4xxx Ink Tank, Colour	Canon	£17.63	£15
DeskJet 340	HP	£199.75	£170
DeskJet 500 Series / Deskwriter Ink Cartridge, Black high capacity	HP	£24.68	£21
DeskJet 500 Series Tri-chamber Colour Ink Cartridge	HP	£27.03	£23
DeskJet 600	HP	£205.63	£175
DeskJet 660C	HP	£280.63	£239
DeskJet 600 Series Ink Cartridge, Black	HP	24.68	£21
DeskJet 600 Series Ink Cartridge, Colour	HP	25.85	£22
DeskJet 870Cxi	HP	£440.63	£375
EP-L Toner Cartridge for LBP-4	Canon	£69.33	£59
EP-S II Toner Cartridge for LBP-8	Canon	£81.08	£69
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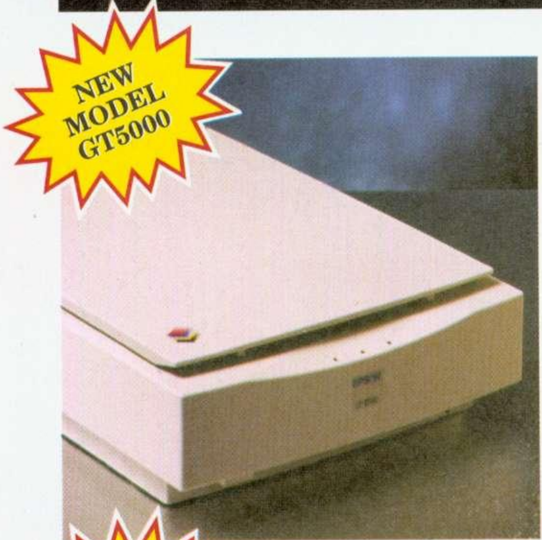
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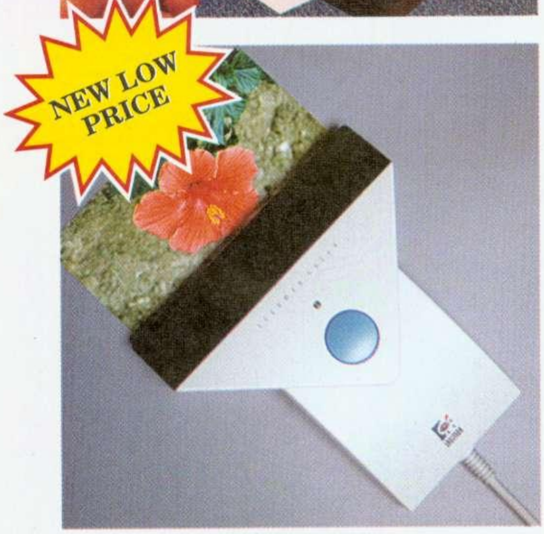
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News

New Psion organisers, will Acorn follow?



PSION has introduced two new pocket computers, the Siena and the Series 3c. This news might get some optimists in the Acorn world prematurely excited. Unfortunately it's a bit early to expect StrongARM-based Psions and, so far, there is no detailed confirmation from Acorn that the new Psions will receive an Acorn Pocket Book badge. However, Acorn has mentioned in passing that it will be increasing the current Pocket Book range, which is based on the Psion Series 3a.

Siena – smaller and cheaper

THE SIENA is a smaller, lighter (183g) and cheaper alternative to the original Series 3a while the new Series 3c is much like its predecessor but adds an infra-red communication facility and has better facilities for linking up to other computers via modem or mobile phone.

A completely new design, the Psion Siena is slightly slimmer than the familiar 3a/3c case in all dimensions. It's also a fair bit lighter and feels quite at home in a shirt pocket. An unusual catch hides the battery compartment and infra-red IrDA-compliant transmitter as well as performing the function of opening and closing the clam-shell case. With the infra-red link you can beam files to and from other Sienas or the new Psion 3c without the need for a clumsy cable. An increasing number of printers support IrDA wireless printing too.

There are some sacrifices in the Siena – the screen is just half the width of a Series 3a/3c, however it retains the same dots per inch resolution, so although you only see half as much of the screen, it's still quite clear, though not back-lit. To the right of the off-set screen is a conventionally arranged calculator keypad. You can toggle between a standard calculator (with virtual till-roll which can be scrolled back to see recent calculations) or the superb, if unusual, scrolling algebraic calculator, which has been a standard feature of Psion Series 3 models from day one.

The keyboard and application touch keys look familiar and though the keyboard is more crowded, it doesn't seem to be any less easy to use. Gone is the telephone dialler function and the sound function no longer has a record option. Sounds are synthesised rather than sampled, so they sound a little tinny. Both the new Psions have a new external cable socket, but the Siena can't, according to Psion, be connected to either a modem or a mobile phone. There seems to be some indication that this was a deliberate ploy by Psion to avoid confusing the market and compromising the new 3c models.

With the infra-red link you can beam files to and from other Sienas or the new Psion 3c without the need for a clumsy cable

Two memory sizes are available for the Siena – 512K and 1Mb. No SSD (solid state disc) slots are included, though the manual refers to an external SSD drive. All the main Series 3 built-in applications remain and the Data function now has a list view. Psion will be marketing a range of trendy alternative cases with a selection of weird and wonderful colours and designs. Smaller AAA batteries are used, but at least 40 hours of normal operation are promised by Psion.

The two Siena models are priced £169.95 inc VAT for the 512K version and £229.95 inc VAT for the 1Mb version. Psion hopes those who have been put off by the higher price of 3a models in the past will now be tempted by the Siena. The lower price point will also be welcomed by schools, should we see a Siena Pocket Book.

Million-seller made better

PSION has concentrated on evolutionary enhancements to the tried and tested Series 3a and come up with the Series 3c – not sure what happened to 3b. The electronics work at a lower voltage and battery life has increased to around 80 hours of typical use. Like the Siena there is a new IrDA-compliant infra-red link and the new comms port is also featured. The serial communications link now operates at 57600 bits per second, three times faster than before and there is a new Psion 14.4Kbps 3Link modem to match.

The Series 3c supports OVAL, Psion's latest programming language which is compatible with Microsoft Visual Basic. Among the various tweaks to the built-in software applications there is a list view for the database, a 'busy' view for the Agenda diary/scheduler and the sound recorder now has an editing function. There is also a notepad function for convenient 'jotting' and a revised file manager.

Psion is promising a full suite of Internet applications, including Internet e-mail and a Web browser. One criticism of the original Series 3 design was its lack of support for industry-standard PCMCIA mini-card devices, like modems, for example. This has been answered via an optional PCMCIA drive which connects to the new expansion port. The two SSD drive bays are, however, retained.

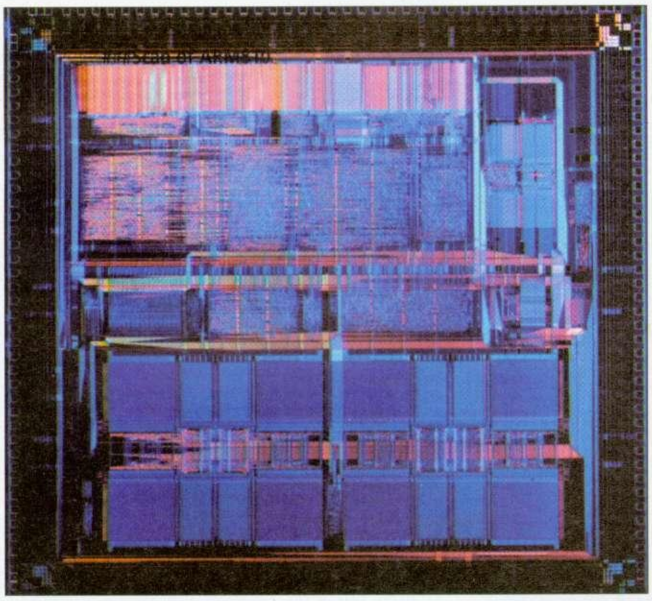
Recommended prices for the 1Mb and 2Mb versions of the Series 3c, £339.95 and £399.95 respectively inc VAT, are the same as the earlier corresponding 3a models before their recent price cut. Now that Psion's new Siena has been priced from less than half its up-market sibling, one could speculate that Acorn will be examining its Siena Pocket Book options with some enthusiasm. The old Psion Series 3a range will continue on sale for some months, but a Psion representative hinted to *Acorn User* that the 3a would be phased out fairly soon.

ARM unveils 810 chip

ARM Ltd has shown its 810 processor for the first time at the recent Hot Chips 96 semiconductor show. The ARM810 has been somewhat over-shadowed by the ultra-fast StrongARM developed by Digital. Delivering 80mips (million instructions per second) the StrongARM is nearly three times faster than the ARM810.

Acorn has dropped plans to introduce ARM810 versions of the Risc PC in favour of the StrongARM. However, the 810 has a bright future as a higher performance alternative to the original 600 and 700-series ARM processors which have been acclaimed in power-sensitive applications, like portable devices. ARM revealed that the 810 consumes 500mW power at 3.3V, compared to 72mW at 3.3V for a basic ARM7 core and 900MW at 3.3V for the StrongARM.

The ARM 810 has an 8K cache and ARM says the design is optimised for cost-sensitive applications like digital televisions, PDAs (personal digital assistants) and NCs (network computers). The ARM810 features a five-stage pipeline which enables each instruction to be executed over more cycles, reducing the amount of work done at each stage and allowing higher clock rates. Although the higher speed increases the chip size and power consumption, performance is doubled compared to the ARM710, and ARM points out that its industry-leading mips/Watt and mips/mm2 ratios are preserved. ARM Limited's web site is at: http://www.arm.com/



Psion StrongARM?

PSION will do nothing more than make vague hints about their next-generation technology. They won't even confirm forthcoming products will be ARM-powered, even though they are openly working with Digital on porting their Epoc operating system development environment to StrongARM.

One thing a Psion spokesman seemed to rule out to *Acorn User* was the adoption of handwriting recognition. Instead, voice recognition will be the technology Psion will concentrate on, which ties in nicely with their mobile telephony aspirations. Co-incidentally, Motorola has revealed that it is working on speech processing developments involving ARM processors as well.

Psion sold 163,500 organisers in 1995, capturing a leading 32.7 per cent of the world market, according to Forrester Research figures. A million Series 3 organisers have been sold since their launch over five years ago. Nearly 20,000 of those are Acorn-badged Pocket Books. Psion PLC, tel: 0171 262 5580, fax: 0171 258 7340

StrongARM benchmarks

THERE has been considerable debate on the Internet newsgroups regarding the relative performance rating of the StrongARM processor. This comes after a benchmark list was published on the Internet, placing the StrongARM inside the top-ten of processors tested, ahead of Intel Pentiums, and only beaten by super-RISC chips like the awesome DEC Alphas.

StrongARM is, indeed, an amazing chip, but its capabilities have to be put into perspective. The Dhrystone benchmarks quoted by the performance ranking, which was the subject of the debate, only measures integer processing performance and even then, the benchmark can be affected by the quality of the C compiler used.

Also, the StrongARM is a 32-bit chip compared to the 64-bit architectures of most super-RISC chips and even the Pentium CISC design. The efficiency of the overall system is not tested as Dhrystone benchmarks usually execute entirely within the host processor's cache memory. Nevertheless, Acorn quotes a figure of 204MIPS at 200MHz for StrongARM. The fastest chip on the list is 266MHz Alpha returning almost 367mips.

Our very own loose performance 'calculation' suggests a 30MHz ARM610 is equivalent to an Intel 486 DX2/66. An Intel Pentium 75 usually benchmarks in a system twice as fast as a 486 DX2/66. If we argue that a 40MHz ARM710 is about 40 per cent faster than a 30MHz ARM610 (benchmarked in a Risc PC) and a StrongARM is five times faster than a 40MHz ARM710, then we can work out that a StrongARM is about seven times faster than a 30MHz ARM610.

If a 30MHz ARM 610 represents half the speed of a Pentium 75 – say a Pentium 37.5, a StrongARM should equate to seven times the performance of a Pentium 37.5, or a Pentium 262.5. Ah, so a StrongARM out-performs a Pentium 200, which is the fastest available Pentium Intel yet sells. That's a very dodgy statement indeed but fun to wind up the Wintel brigade.

The famous Internet processor benchmark list is proof of its own fallibility – it lists different Pentium 90 systems as returning MIPS results of between 45 and 124, while a lowly Pentium 66 recorded over 100MIPS. The same rule applies to any benchmarking program – lies, damned lies and benchmark results.

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(THE PROFESSIONAL DESKTOP PUBLISHER)

Ovation Pro combines fast responsive word processing with state-of-the-art page layout features to deliver the ultimate desktop publishing system. Packed with a staggering range of professional features—many available on the Acorn platform for the first time—Ovation Pro opens up a whole new world of document design. At last you can flow text inside and outside irregular frames or rotate them to any angle—in both cases the text remaining fully editable. Even with such vast range of features Ovation Pro is still easy to use, thanks to a superb user interface that makes the software easy to learn and instinctive to use.

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(THE EXTENDABLE DTP SYSTEM)

Ovation Pro has advanced expansion capabilities using extension modules called Applets. These allow new features to be added without the need to upgrade the main application. Simple extensions may also be written using the integrated script language. A range of extension applets and scripts are planned for the future.

(THE OVATION PRO PACKAGE)

Ovation Pro is supplied with a 300-page reference manual, separate tutorial, reference card, Bubble Help, Desktop Thesaurus, 50 outlines fonts (from EFF, Acorn and Beebug) and a sample selection of clipart from DEC_dATA.
Full colour brochure available on request.

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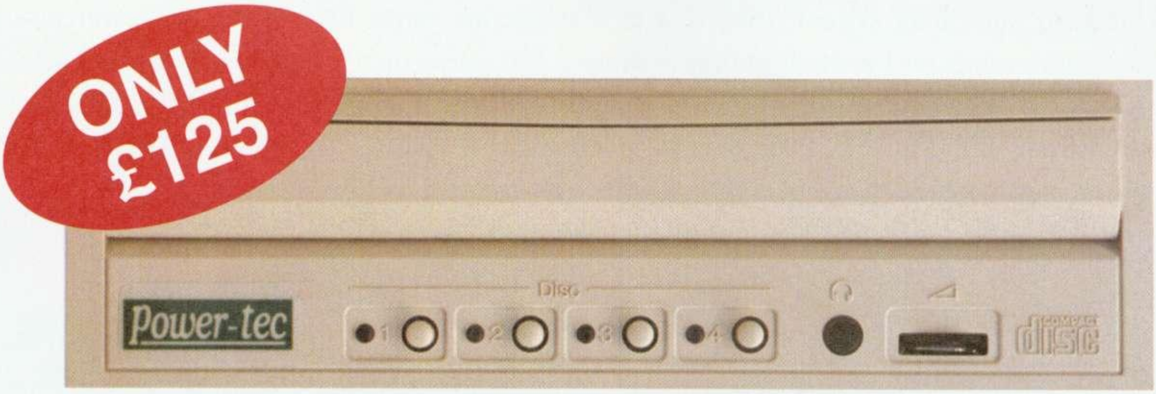
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Avery ink-jet labels

LAST month it was labels for CD-ROM discs, this month it's labels for ink-jet printers. Avery Dennison's latest offering is more accurately described as labels made from specially coated paper designed specifically for ink-jet printers.

The special coating prevents the blurring or feathering of the ink-jet image caused by paper fibres on the surface of the sheet. Supplied samples of Avery's new ink-jet labels certainly back up the company's claims, with sharp graphics and well-saturated colours. Specially coated paper for ink-jet printers has been available for almost as long as ink-jet printers have been on sale, so it's surprising to learn that Avery is the first label supplier to use special ink-jet paper for its label stock. Sizes available include 8, 14, 16 and 21 labels per A4 sheet. 25-sheet packs have a recommended price of £22.99 and you're covered by a money-back guarantee.

Avery Office Label, tel: 01628 764 000, fax: 01628 764 110.



Voyager voice-mail

VOYAGER, the Internet communications suite supplied by Argonet to its Internet subscribers has been enhanced with the addition of a voice-mail function designed to work with the company's recommended modem, the USR Sportster Vi.

The voice-mail facility, which effectively enables the modem to function like a digital answering machine, using your computer's hard disc as a recording medium, was developed in conjunction with USR and is being made available free to Argonet subscribers. It's possible that the voice-mail facility may become a commercial product in its own right at some time in the future.

Meanwhile, the group of companies including Argonet, VTI and Eclipse are now listed on the stock market. If you are interested in purchasing shares in VTI Holdings PLC, a prospectus is now available from the company on tel: 01243 531 194, fax: 01243 531196, e-mail: vti@argonet.co.uk



Tektronix Phases in colour printers

TEKTRONIX has announced new solid-ink, or phase change colour ink-jet printers and has celebrated the news by offering buyers free supplies of black ink. The new Phaser 350 replaces the successful 340 model which was launched in March last year. The PostScript Level II printer can now operate at up to six pages per minute instead of four and the printer can be linked via Internet protocols to a suitable network so that printer status and settings can be remotely examined and adjusted using a standard Web browser.

Phaser solid ink printers use a wax-based dye which has to be melted and then jetted via piezo-electric nozzles onto the print medium. As the ink is a wax, it can print on almost any material that fits safely through the printer mechanism, including some fabrics.



Tektronix also claims that, like for like, the Phaser 350 represents a 25 per cent cost saving over the outgoing 340 model. Phaser 350 prices were not actually available at press time, however. Tektronix has also announced the Phaser 300X, an A3 format printer which replaces the Phaser IIIPXi/300i. The Phaser 300X is faster than its predecessor and has improved proofing facilities.

It is priced £7,495 + VAT. Tektronix, tel: (01628) 403 640, fax: (01628) 403 653.

Xemplar catalogue

XEMPLAR Education, the joint venture between Acorn and Apple targeting the education market, has launched its first autumn catalogue. The company says the new catalogue covers solutions for pre-school, primary and secondary schools and colleges and also includes partnerships with other educational resource suppliers apart from Acorn and Apple.

Brendan O'Sullivan, Xemplar Education's managing director, commented: "since its formation, Xemplar Education has been totally focused on supplying complete solutions for the classroom which enable and assist teachers in their teaching. We have developed this focus by taking a closer look at the needs of teachers throughout pre-school, nursery, primary and secondary schools – markets we know better than any other company. We then designed solutions which incorporate the particular resources required to teach in the given subject area." O'Sullivan added: "Supplying the educational market is no longer simply about selling computers to school, it is about providing everything needed to make IT most effective in the classroom. Our new catalogue presents Xemplar's commitment to this approach."

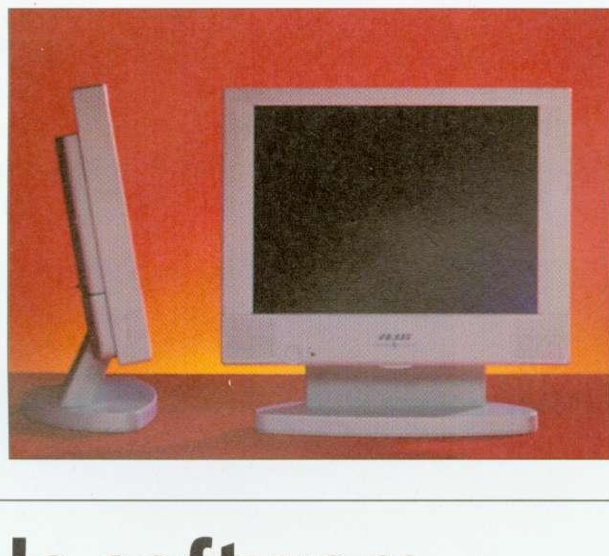
Primary schools are being offered primary Classroom Resource Packs, which include selections from a broad range of educational software and book, audio and video tape suppliers, as well as hardware from either Acorn or Apple. There is a similar formula for Xemplar Toolbox products, each of which is supplied with software, hardware and other resources tailored for various curriculum needs.

The new Autumn'96 catalogue is being mailed to over 40,000 teachers and IT co-ordinators around the country, but if you don't receive one you can obtain one free of charge from Xemplar direct via tel: (01223) 724262, fax: (01223) 724300, e-mail: info@xemplar.co.uk

Great new monitors

TWO leading monitor makers have interesting news this month. iiyama, which has developed a reputation for producing excellent budget-priced displays, has reduced the prices of its 17 and 21 inch monitor ranges. Unfortunately, for some reason our press release contained US$ prices, but for example, the popular Vision Master 17 has been reduced from £549 + VAT to £529 + VAT.

At the other end of the cost and features scale, Taxan has launched a futuristic LCD flat panel LCD which is aimed at replacing conventional and bulky CRT (cathode-ray tube) monitors. The new top of the range Taxan Crystalvision 650 has an active-matrix thin film transistor (TFT) display with a 14.5 inch visible diagonal and a pixel resolution of 1024x768. This compares with some conventional 17 inch monitors which can measure up to a mere 14.8 inches of true visible diagonal.



As the display is truly flat, there are no geometric aberrations to worry about and colours will be consistent too. The only concession to conventional technology that the Crystalvision 650 makes, is the number of displayable colours, which is 262 maximum compared to most quality CRT monitors' ability to render 16 million plus. One advance Taxan claim over most of their flat panel rivals is that you don't need a separate interface card via which the monitor is connected.

The Crystalvision 650 has its own analogue to digital converter so it can be plugged into any industry standard VGA connector, including those on later Acorn computers. Multiple scanning means that 800x600 and 640x480 resolutions can also be supported, plus there is VESA DPMS power-saving too. But the biggest feature this monitor has is its cool looks – it really wouldn't look out of place on Jean-Luc Picard's ready-room table.

Back down to earth, while iiyama are shaving the pounds off the prices of its conventional 17 inch monitors and rapidly approaching the £500 mark, you could buy almost six iiyamas for the price of one Crystalvision 650, which is priced £2999. Taxan say that dealers will almost certainly discount that price, however. iiyama Europe, tel: (01923) 219050, fax: (01923) 219048, Taxan (Europe) Ltd, tel: (01344) 484 646, fax: (01344) 50974.

Welsh Bible software

TAVISTOCK-based ExpLAN Computers Ltd has announced a Welsh language version of its Holy Bible software, which is called *Y Beibl Cymraeg Newydd* (New Welsh Bible). The software is aimed at Welsh-speaking schools and ministers who require a version of the Welsh Bible which can be electronically searched and cross-referenced. The first edition supplied also contains the Apocrypha.

The rich-format Welsh text is licensed from the British and Foreign Bible society and has been internally re-numbered to the Hebrew standard, so it can correctly auto-track with other Bible versions having alternative book and verse ordering. *The New Welsh Bible Pack* is priced £25 + VAT for a single-user licence and requires a Base Pack if you don't have one already. For more information, contact ExpLAN on tel: (01822) 613868, fax: (01822) 610868 or e-mail explan@explan.demon.co.uk

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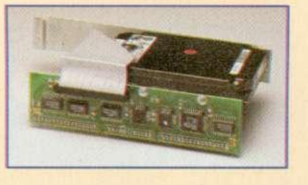
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Optima returns

Spotted at the recent ECTS'96 leisure computing trade show was none other than an updated Eidos *Optima* digital video editing suite, now based on a Risc PC instead of an A540 and sporting much improved video resolution and clarity.

The original Eidos *Optima* package sold in small numbers to enthusiastic film producers, including the BBC, for use as a non-linear video editing system. You did your edits on digitised footage and then programmed the finalised edit instructions into a vastly expensive linear editing system to finish the job.

The problem with the old *Optima* system was that, although it had every fade, wipe and special effect you could want, its display quality was poor. Enlightened film editors didn't mind at all, but they were in the minority and the product was shelved a couple of years ago. Then the Risc PC came along and Eidos used the extra processing power provided to improve the digital sampling quality. It's now almost VHS quality, according to our spies and more than acceptable for semi-professional and professional use.

Apparently, Eidos are eyeing up a sizeable contract being offered by the BBC once again. The final ingredient to the re-born *Optima* package will be the StrongARM processor, enabling a Risc PC to do quality real-time digitising and compression at a price which could stun the competition.

Eidos, the company, has moved on remarkably since its inception about five years ago. The company now owns the majority of the UK games software producers, but company co-founder Stephen Streater still has time for the *Optima* project. Hopefully, some of the technology Eidos has developed recently will find its way into Risc PCs of non-professionals too.

!LazyPrint updated

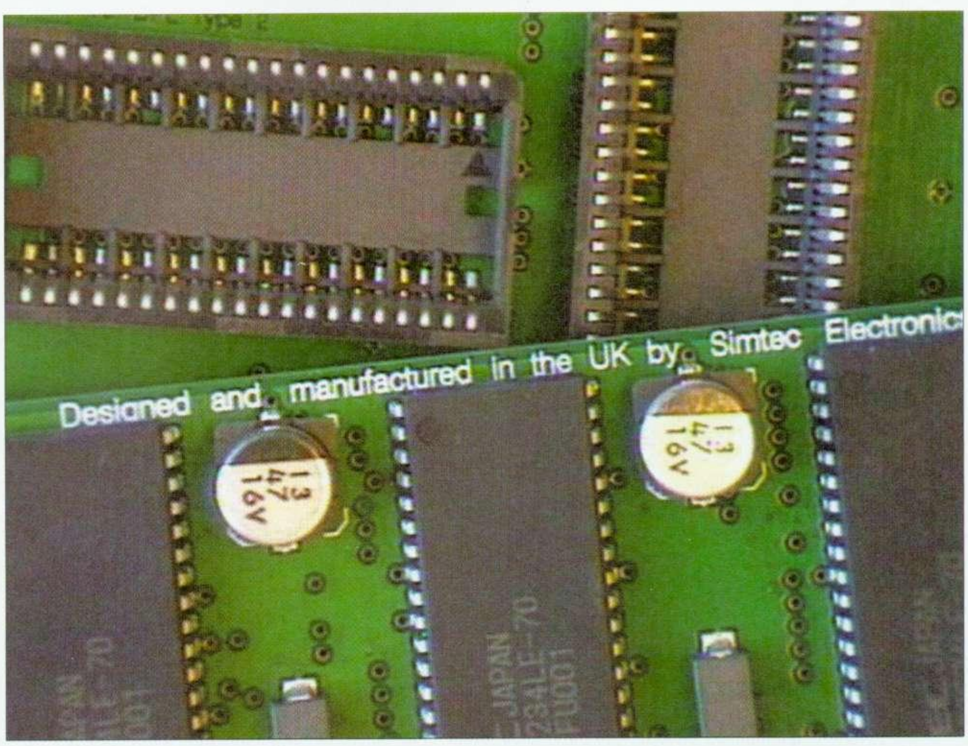
!LAZYPRINT, the utility published on the *Acorn User* cover disc in June, has been enhanced and has now reached version 2.10. Author David Crennell tells us that enhancements include changes to fonts, underlined text and StrongARM compatibility work has been completed. There are also a few bug fixes as well.

David says that users of Hewlett-Packard printers who are interested in obtaining the latest version can do so by becoming registered users. All you have to do is read the instructions in the ReadMe file contained in the version of *!LazyPrint* contained in the June cover disc or contact 'Fortran Friends' on tel: (01235) 834357 for further information. David can also be contacted via e-mail at: crennell@v2.rl.ac.uk

Simply Simtec

Continuing the tradition of making user-expandable memory modules, Simtec has just launched a new VRAM upgrade. This comes in two guises, a user-expandable 1Mb board and a 2Mb board. The 1Mb version has the unique feature of having empty sockets into which additional chips can be plugged within a few minutes to give 2Mb. This avoids the current inconvenience of sending a card away to have the extra chips soldered on.

Also as part of the development of the multi-processor, Simtec will be demonstrating the new multi-threading extension for RISC OS at Acorn World. As well as simplifying software design, it will enable new software to run on any machine from an A3000 to Multiple ARM Risc-PCs automatically taking advantage of any extra processors present. More details will be available at the show.

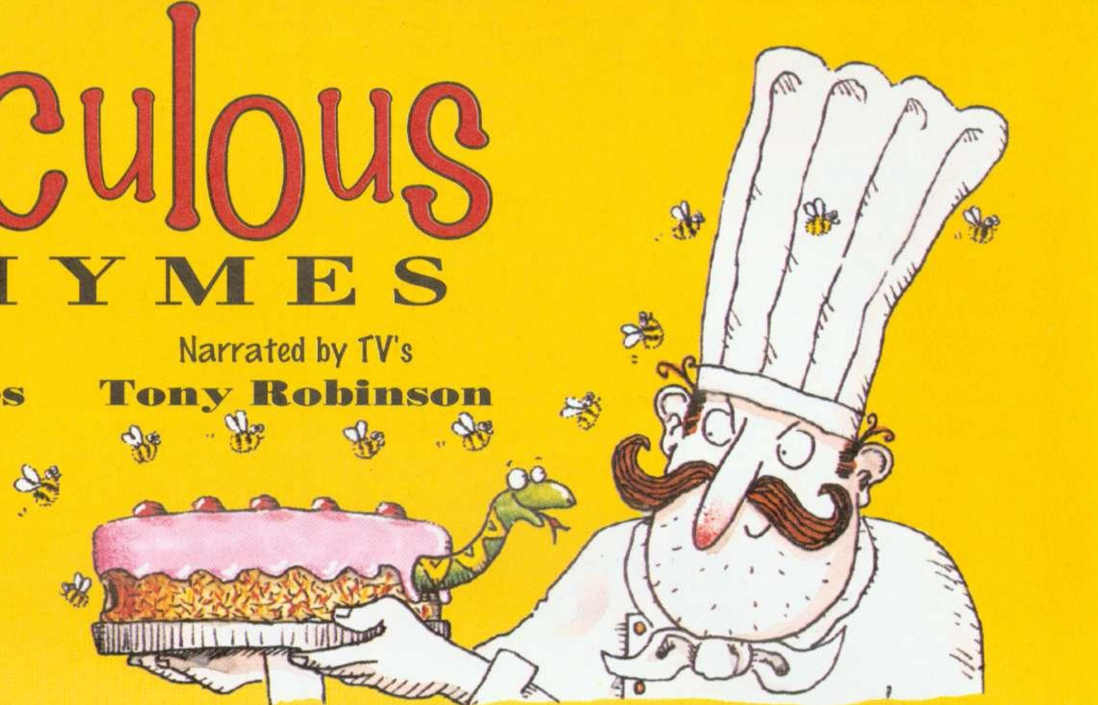


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Acorn artists & designers only

TJ REPRODUCTIONS, arguably the best Acorn repro bureau of them all, now offers a new service dedicated to Acorn graphics users. Using state-of-the-art, 64Mb, Postscript 2 dye-sublimation printers, the one week service costs £12.50 for the first 9.5x13in high gloss print and just £7.50 thereafter.

Officially this is open to Acorn users only, and is less than half the standard price for professional proofing. It is true that printers like the Epson Stylus and BJ600 are a cheaper alternative but not even the impressive Fargo Primera or colour laser copiers can match the size and quality of output from TJ's true photoreal equipment. As would be expected of a high end repro house, the bitmaps and vector graphics can be colour matched to different printing press standards or to the screen display.

Bitmap files such as Sprite, Tiff and JPEG are supported as are *Compo*, *Artworks*, *Draw* and *Vector* graphics, even *Impression* documents; all acceptable on most types of removable storage media.

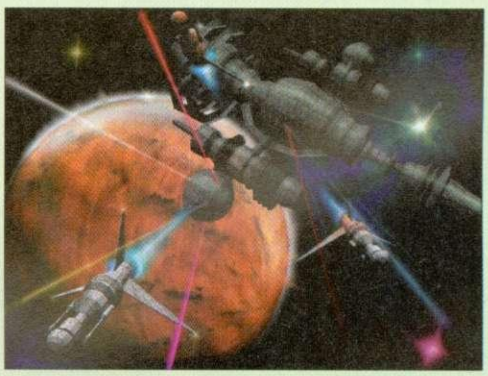
Specifically aimed at schools, young artists and designers, it seems the service will enable schools and non-professionals to attain professional quality final output at an affordable price.

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Pics of the Month

SCIENCE fiction is the theme with Nigel Wood's winning picture this month. The piece, entitled Galactica, looks as if it has been rendered on a Sparc or similar but was in fact originated using a combination of *Architech* and *Photodesk*.

One of the other images, Abduction, was actually A2 sized originally and makes good use of *DaVinci*'s powerful 'environment-mapping' rendering technique, *Artworks* and *Photodesk*. A number of other bitmaps were supplied as JPEGs on just a single floppy; the second month running that enough for a good portfolio has been supplied on a single disc.



Galactica and Abduction (below) by Nigel Wood from Lymington. Who needs Silicon Graphics?



Hot tips for the October Show

There has been much in the way of new graphics software in the last six months but hardware will be the pulse-raising element at this year's Acorn World.

Look out for Irlam Instruments' MJPEG card, deals on the superb Risc TV podule and the long awaited Video Desk. Lots of stands will be featuring StrongARM technology, none less than Acorn themselves. I look forward, once again, to the demos and wizardry of the Bondar and Cox variety. I am sure that graphics users will not be disappointed by this very real technology.

Professional grade 3D graphics has been threatening to burst out into the open for longer than many have been comfortably able to bear. What better a time then to reveal all.

Finally, not wishing to forget other users whose needs are more practical or simple, keep a keen eye open for some super deals on DTP applications, multimedia hardware and graphics stuff. With all the new releases there are bound to be some fantastic bargains around. CC, Clares, Spacetech, Pineapple, Alternative Publishing, Beebug and Oregan are the Graphics Page's hot tips.

Draw aid 3

Not having reviewed any of the previous versions of *Draw Aid* from Carvic, number 3 is simply too good to ignore. Owing to a lack of room on this month's page, we are not able to preview the application in full, but at first glance it works remarkably well as a very easy to use, multitasking BASIC programming tool for creating otherwise extremely time consuming vector graphics. More next month.

Carvic, tel: (01309) 672793

Contacting me

You can contact the graphics and DTP page by writing to me, Jack Kreindler at *Acorn User*, Media House, Adlington Park, Macclesfield SK10 4NP, or by email to augrafix@idg.co.uk.

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StrongARM power

AS more technical details of the new StrongARM become available I've been particularly interested in details of the new processor's low level function. Judging purely from technical reports from the manufacturers, the new processor is set to be as much of a revolution in performance since Acorn first strapped a cache on to an ARM for the groundbreaking ARM3 – perhaps even more so.

As well as the radical increase in clock speed, important improvements to the caching and cycle time of the instruction executions will have a dramatic effect on processing power with major benefits for graphical code. The separate 16K instruction and data caches will certainly relieve some of the bottleneck imposed by the bus, although straight shifting of bitmaps to the screen is unlikely to receive much of a boost.

Of equal importance is the acceleration of the execution of many instructions, most of which execute in less cycles than on previous ARM chips. While common instructions like branching, ADDs and MOVs execute in only two cycles compared to three cycles on older processors, the MUL instruction takes a maximum of only three cycles. The number of cycles to perform this instruction varies depending on the size of the numbers being multiplied, but in its worse case, this could have taken up to 17 cycles on the ARM700.

These dramatic improvements will be particularly invaluable to the 3D graphics coder who performs many calculations for each pixel of the screen. In my early days as a demo coder on the old ARM2, *real time ray tracing* used to be an in joke describing the next effect we were working on, but the reality is really not that far away.

In addition to the great benefits of the StrongARM, there are drawbacks. Self modifying code is only possible with the use of a very expensive *SynchroniseCodeAreas* call, and this will lead to major problems with existing code that uses this method without the call. Problems are also encountered over previously recommended compaction tools. Self expanding archives, like those produced by BASS's *Crunch* utility do not work on the StrongARM. Watch out for Crunched versions of *Acorn User*'s QTM module which will cause problems.

As the overall design of the ARM processors becomes more complex, the very direct and obvious way of coding is taking a big change for the StrongARM. In some areas, performance may actually be reduced, as is the case when reading data from uncached areas like the screen. Conversely, many of the new methods of operating the cache and write back buffer can be used positively by code tailored to their method of working.

Many of these details are outlined in the technical specs available from Digital Semiconductors, but much experimentation will be needed before it is clear how best to optimise code to exploit the power of StrongARM to its full. As the StrongARM comes into use in the PD scene I'd love to hear from anyone who gets to grips with these aspects of the processor. I'll certainly be covering the effect and potential that the new processor has for the PD scene over the coming months.

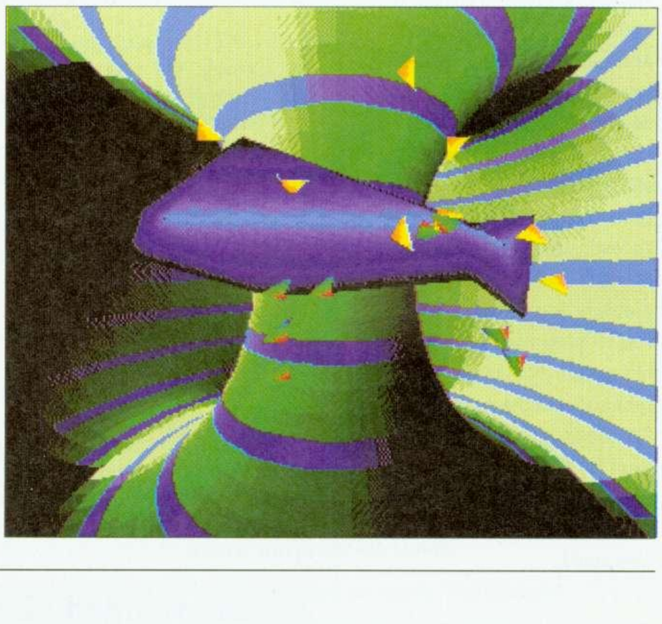
Programmers who have so far succeeded in protecting their bank balance from the ever increasing temptation of the new StrongARM, will receive a renewed assault from the details found in Digital's introductory technical specs and guidelines. These can be located on the Digital Databank BBS. Further information can be found in the StrongARM Technical Reference Manual, available from Digital Semiconductor's WWW site at http://www.digital.com/info/semiconductor/dsc-strongarm.html

Fishtank simulator

THIS rather unusual idea is the first mini demo from a group new to the Acorn scene. DFI have produced a little 3D world, populated by gourrard shaded fish. The surrounds of the fishtank are light sourced in a highly colourful manner, producing an interesting background to the fish themselves.

A shoal of tiny vector triangles swims around the foreground of the picture, and a much larger shark type fish circles the tank menacingly. This little loader certainly shows off the group's 3D talents, but I couldn't help noticing little niggles present in the polygon rendering routines, and an apparent bug in the fill routine that causes flickering horizontal lines across the screen on odd occasions. It's this attention to detail that the Acorn demo scene has often lacked in the past.

The team are promising further releases soon, including a 3D megademo entitled the *White Room*, which should hit the streets in October. *Fishtank* is available from the Arcade BBS and from 5 Star on disc D79.



WebGif2

WEBGIF has been mentioned before in David Matthewman's HTML tutorial, but I thought this handy little program deserved a further mention here. Producing graphics for web pages is all about compromise – getting the best graphical appearançe out of the smallest file size. *WebGif2* helps you to do this by giving easy drag and drop conversion of sprite files to web standard Gif files that incorporate several extra features.

The most valuable of these is the Mask, which allows images to be given a transparent background. You can also make an image interlaced so it can be displayed a bit at a time as it is downloaded for display on someone's web page. *WebGif2* is available on the net from author Ian Jeffray's web site, at: http://www.compulink. co.uk/~paradise1/ian.html

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Games on the way

The recent flood of PD games looks set to continue as up and coming groups on the scene, Arm'd and Dangerous and Gilbert The Hamster Software continue to release new programs. GTHS are working on a new game – the "Advanced run for the bus simulator" and the latest news from Arm'd and Dangerous can be found on a new web site at : http://www.argonet.co.uk/users/robert.t/

Optic

The *Optic* disc magazine can be obtained for just £1 per issue, or £2 for all three issues, direct from Jonathon Gutteridge at: 2 Newton Close, Eaton Rise, Norwich NR4 6RB. Apologies to Jonathon for omitting the prices in the September column.

Acorn World

Despite writing this at the height of summer, the time of the biggest Acorn show of the year is approaching fast. As always, it looks set to be the most exciting Acorn event on the calendar and its significance to the PD scene is no exception to this rule.

I'll be on the *Acorn User* stand all day on the Saturday, so please come along for a chat. As always, I'd love to hear your views on the PD scene and help out with any problems you might have. Feel free to bring along your PD for review in the column or submission to the cover disc and PD scheme. A special Digibank meet for PD enthusiasts and BBS users is taking place on the Saturday at 2.30pm at the *Acorn User* stand.

Contacting me

You can contact the PD page by writing to me, Paul Wheatley, at Acorn User, IDG Media, Media House, Adlington Park, Macclesfield, SK10 4NP. Or preferably, by e-mail to aupdpage@idg.co.uk.

Software requests

ACORN USER PC columnist, Mike Buckingham, is looking for a specialised application to record the cost of voice phone calls. The ideal app would provide a mini database of contacts linked to a mouse controlled stopwatch window.

When making a call, the user would select the contact from the database and time the call with the stopwatch. This information would then be used by the program to calculate the cost of the call and append the details to a spreadsheet or log file.

In response to John Billings' request for an Apple Mac to Acorn sound convertor, *Dis-le* author, Mike Smith has a *ConvSnd* application that currently only converts the other way. Mike might be able to help however, and can be contacted by email at: mike@msmith.zynet.co.uk or by snail mail at: 26, Grenville Road, Saint Judes, Plymouth, Devon, PL4 9PY.

ARMEdit

ALEXANDER THOUKYDIDES has just released a new version of his popular *ARMEdit* software. This suite of utilities provides a host of aids for the use of Acorn and Aleph One PC podules and co-processors. The new release adds many new features, including a DOS device driver that allows RISC OS filesystems to be read from the PC just like normal DOS drives.

Support for Acorn's PC emulator has also been added. Full documentation and library code has been included to allow other programmers to write their own software using the comprehensive communications facilities provided.

ARMEdit is freeware, and may be downloaded from http://www.tcp.co.uk/~thouky/tcfa.html

StrongARM disc

THE CD-ROM Acorn plans to release with the new StrongARM processor will include several new demo releases. A number of demo crews have been enticed by the chance to show off what the StrongARM can do, and judging from both eye witness reports of the StrongARM, and details of the technical specs (see StrongARM power) they are likely to be very impressive.

Contributors include co-author of *Xtreme*, John Tytgat, the master of everything innovative, Frederic Elisei of Arm's Tech, as well as productions from demo veteran Tor Houghton and a release from my own group, Quantum. According to my inside information, the highlight will be a mandelbrot routine from Frederic that can be scrolled and zoomed in realtime. I'll be casting my usual critical glance over these releases in a couple of issues time and hopefully we might even have them on display on the AU stand at Acorn World.

Flashback

FOLLOWING up Nathan Atkinson's request for a music patch for the popular commercial game, *Flashback*, Stephen Harrison has provided an excellent solution to the problem. The Acorn conversion of *Flashback* from the Amiga uses an inferior music player that not only plays the music out of time with the game, but also does it rather inaccurately. Fortunately we now have an easy to use patch created by Protracker music guru, and *QTM* author himself, Stephen.

All you need to do is double click on the *!FBackQTM* patch located on this month's cover disc, and then run your copy of *Flashback*.

While I'm on the subject of music, Stephen's *Q The Music* player has now reached version 1.27, which now offers a host of features ideal for the budding demo or game coder. The player module itself is included with the *Flashback* patch described above, but the complete programmers pack with full info of how to use *QTM*'s new features can be found on the Digital Databank BBS.

The latest version of Chris Rutter's front end for the music player, can be found on the net at: http://www.doggysoft.co.uk/qtmplay/.

TMNP

PHIL WEBSTER has started a regular sprite based cartoon strip that will be available direct from the Digital Databank BBS. Phil's graphics are surprisingly effective given his use of Paint for all the drawing, and are well worth checking out.

Rumours on the BBS hint at a possible collaboration with a team of other users and a possible relaunch of the *New Dawn* disc magazine. *Teenage Mutant Ninja Potatoes* can be found in the graphics section of the Digibank BBS.

Recommended PD Libraries

The Datafile, 71 Anson Road, Locking, Weston-Super-Mare BS24 7DQ

Naked PD, 'Fayence', Fulford Road, Stoke-on-Trent, Staffs ST11 9QT

Arch Angel PD, PO Box 41, Exeter EX4 3EN

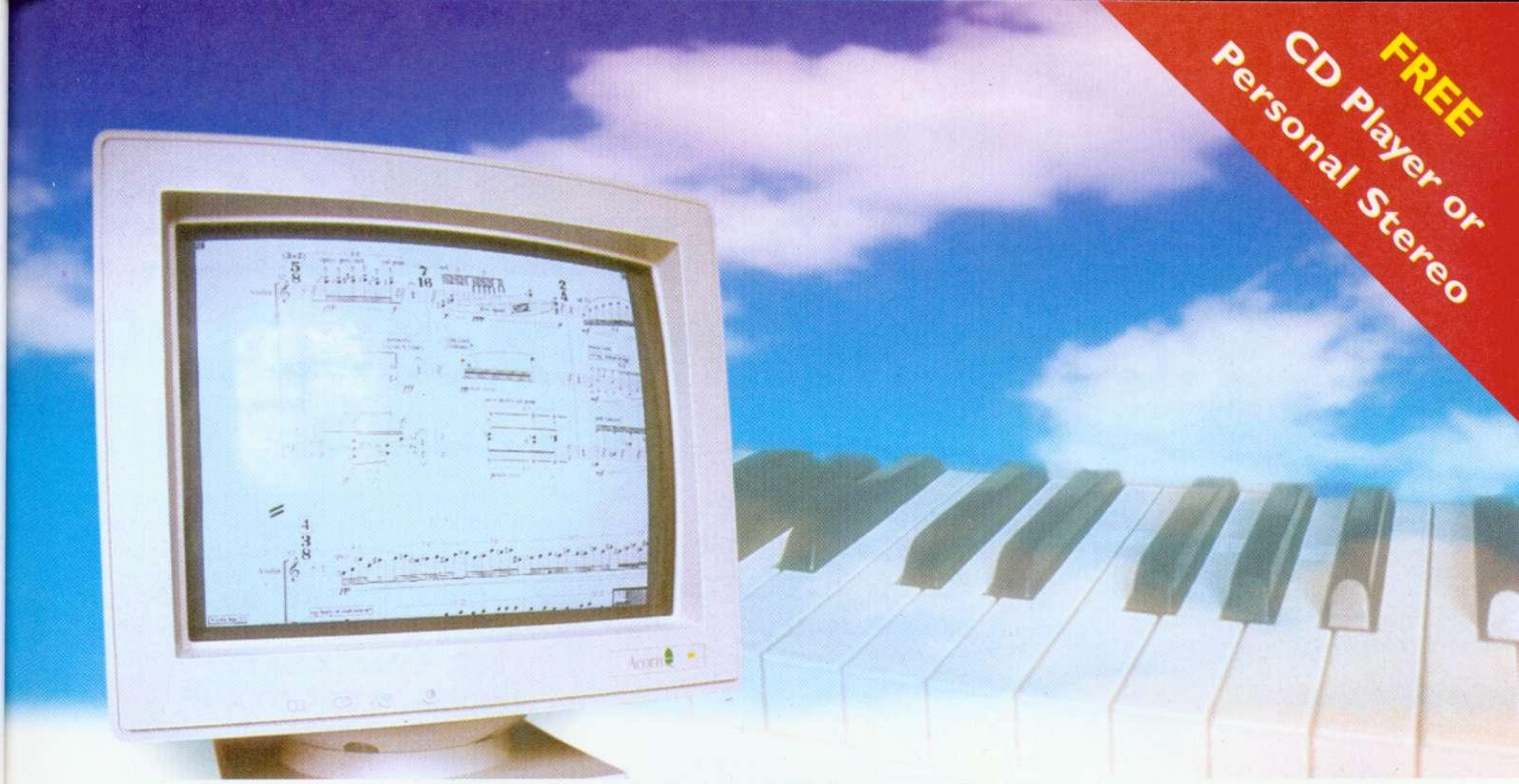
APDL, 39 Knighton Park Road, Sydenham, London SE26 5RN

Five Star Marketing, 4 Shepherds Walk, Bushey, Hertfordshire WD2 1LZ

Beebware PD, 83 Forrest Road, Huncote, Leicester LE9 3BH

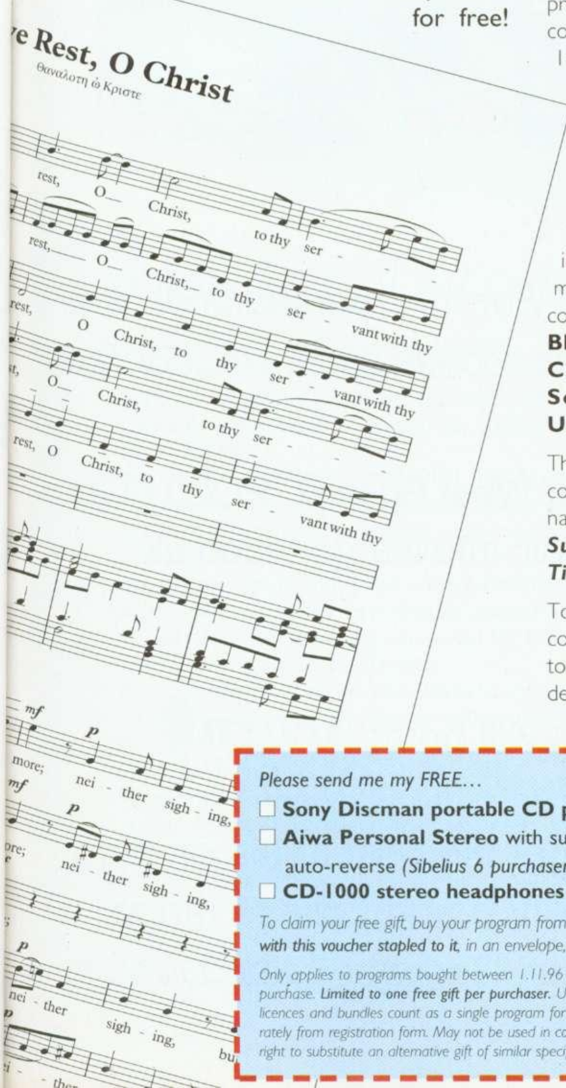
ARM Club PD Library, Freepost ND6573, London N12 0BR

Risc World PD, daniel.hayes@argonet.co.uk



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– ***Financial Times***

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– ***The Times*** leader column, 31.1.96

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Comms

On the Up line at The Sidings BBS

IF you think there might be a connection between The Sidings BBS and railways you'd be right, but sysop Gary Parr is no mere trainspotter. He has always been fascinated by the railways and hopes to make a career in the rail business with that *Boys' Own* dream occupation of train driver. Gary successfully combines his enthusiasm for science and technology with his railway interests in running The Sidings BBS.

Gary Parr and co-sysop Matthew Cook started The Sidings BBS in July, and the BBS has been growing steadily ever since.

Located in Nottingham, The Sidings BBS runs *ArmBBS* on an A305 with 1Gb of IDE discs, a 100Mb SCSI hard disc, CD-ROM drive and a SyQuest EZ 135 drive for backup. The Pace MicroLin FX Plus modem allows connections at up to 14k4 bps, and Gary hopes to add a 28k8 Sportster and another line later this year.



On the right lines at the Sidings BBS

The Railway Related section includes a local rail area map, rail news, timetables and information on preserved railways, and there are plans for a railway filebase. The Football area, edited by Neil Cartledge, contains up-to-date reports and information on matches, forthcoming fixtures and player statistics and there is a large selection of Liverpool pictures in the BBS filebase.

The Games and Doors sections offer callers other means of recreation; there's even a sneak preview area describing what's going to happen in various TV Soap series. Other special sections include the ARM Club with its own filebase, ARM'd and Dangerous Coding group files and a large collection of GIF and JPEG pictures in the Media Freeform filebase as well as up-to-date Acorn, FTP Mirror and PC files.

The Mail Room at Sidings BBS contains some local areas and a large number of networked RiscNet and X-Net message areas, and the user list already contains many names familiar to users of other Acorn BBSs. To add yours to the list, you can call The Sidings BBS at any time.

The Sidings BBS
(0115) 9563481

YoUR List of Acorn Interest Web Sites

YET more Web sites recommended by you:

- http://www.siren.uk.com/siren – Siren Software Systems' web site includes some Careware programs to download for Acorn 32-bit computers
- http://www.webzone1.co.uk/abell_broadcast/info/acorn.htm – Ned Abell's Acorn section of the Webzone site with links to useful Acorn resources
- http://www.ant.co.uk/~peter – Peter Hartley's home page contains interesting graphics, thought-provoking reading and useful PD Web tools to download such as Intergif
- http://www.foobar.co.uk/dialin/utopia/DFI.HTM – Home page of Demo coding group DFI includes a link to download their soothing *!FishTank* demo
- http://www.users.dircon.co.uk/~kozzey/acorn/ – A page dedicated to the community of regular users of the IRC channel #acorn
- http://www.guernsey.net/~surcombe/ – John Surcombe's home page and link to his *QWiK* offline mail reader page, where you can download the latest version
- http://www.aberry.demon.co.uk/programs/ – Andrew Berry's Freeware program pages
- http://www.infotrek.demon.co.uk/freeware/qedit/ – Home page of *!Qedit*, David Croft's outgoing e-mail and news re-editor
- http://www.ph.kcl.ac.uk/~amb/riscbsd/ – Official home of RiscBSD, the ported version of NetBSD unix for the Acorn RiscPC
- http://www.tcp.co.uk/~thouky/tcfa.html – Home page of *ARMEdit*, a suite of Freeware utilities for use with Acorn and Aleph One PC cards, and Acorn's *!PCEm*
- http://lucy.cs.waikato.ac.nz/~pnaulls/acorn-archives/ – The HTML version of the list regularly posted to comp.sys.acorn, of FTP sites containing Acorn or Acorn-related software
- http://www.ark.org/users/Ali.html – Alasdair Bailey's selection of saved cities for the Acorn version of *Sim City 2000*, and photographic backdrop sprites for use with the Risc OS pinboard
- http://performance.netlib.org/performance/html/dhrystone.data.col0.html – Dhrystone Performance Web page listing some of the fastest machines around, where the RiscPC SA110 comes in 8th from the top of 291!

Homepage automation

Many Acorn users have been busily setting up their own **Demon Internet** Homepage WWW sites. Roy Fellows has come up with a very useful script-generating program to enable *!TCPIP* users to upload and refresh such web sites automatically. Direct your browser to http://www.tilmun.demon.co.uk/club/roy/uplhome.spk making sure that you save the resulting file as HTML if the browser tries to display it.

Icarus Allsorts BBS

David Hart is causing a stir among invited callers with his new BBS system called Icarus Allsorts BBS. It's a hybrid system running ArmBBS on an 8Mb ARM3 A310, but with RiscBBS performing some background tasks on an A3010, linked to the other machine by a Virtual Hard Disc Server called SerNet by Andrew Timmins. Unique menus and novel animated graphics make this BBS one to watch out for when its final phone number and online times are settled.

Icarus Allsorts BBS
Ring voice first on (01977) 620702

URL of the month – Messenger

Mark Sawle's e-mailer and newsreader *!Messenger* is gaining popularity with users of *!NewsBase*, Graham Allan's Internet mail resource database. Although compatible with and usable as an alternative to Robert Orwin's *!TTFN* mailreader, Mark recommends you use one or the other and join his *Messenger* mailing list to keep up with the latest developments. You can find out more about *Messenger* from Mark Sawle's *Messenger* pages.

Messenger Web pages
http://www.locutus.demon.co.uk/messenger/

Contacting me

Send me any Acorn-interest URLs you find, and I'll publish a selection. You can contact me by writing to David Dade, Acorn User, IDG Media, Media House, Adlington Park, Macclesfield, SK10 4NP, or by e-mail to: DaviD@arcade.demon.co.uk, or mail #2 on Arcade BBS 0181-654 2212.

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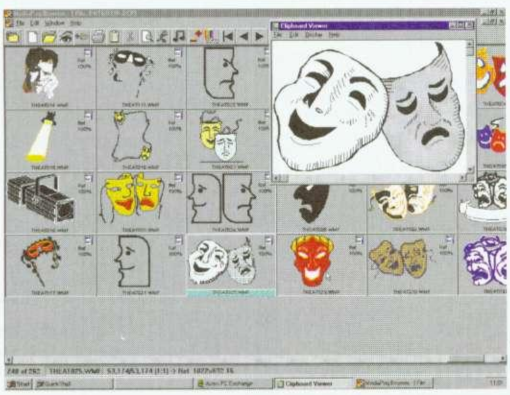
PC column

Masterclips collection

EVEN the best art package cannot turn someone like me into an artist. The best solution is to resort to clipart. Browsing around PC World I came across a shelf loaded with it. I chose IMSI's *Masterclips* – a collection of 35,000 images including artworks, photos, fonts and borders.

It installs easily and runs smoothly on my system. Browsing is easy and selection of images very simple. An icon allows you to save a selected image to the clipboard from where it is available to any other Windows program that can access it – and most do. If you have *PC Exchange* running, your selected clip image is also available to anything in RISC OS. Switching back to the RISC OS desktop will show *PC Exchange* holding a data file which can simply be dragged either onto a suitable directory and saved, or direct into a package like *Impression*.

The transfer works well but you can run into problems with colour images – pure colours are rendered as tartans or become blotchy. This happens if the display settings in *!PC* config are set to low res. If you reconfigure to high res, the colours are rendered properly.



A browser lets you view the images by category

The collection comes on two CD-ROMs with a substantial printed directory, in which the images are displayed as thumbnail black and white sketches.

The images are inevitably biased towards America – policemen wear US uniforms and the history section is heavily populated with US figures although some of the major world politicians are also included. There are also maps and cultural images from around the world.

Note on installation: In Win95 I had to go through the My computer'/'new programme route as the d:\install function via the 'run' option didn't work as described in the loading notes – Win 95 claims not to be able to find the install file. In fact this isn't that unusual – so bear it in mind if something refuses to install as expected.

Learn to speak French?

OR perhaps Spanish, German or Italian. Over the last few days I've wished I could afford another computer – getting at my own has been difficult due to a language software package from The Learning Company. The *Learn to Speak* series isn't exam oriented, it is aimed squarely at amateurs – people who want to go to a country and get by. It concentrates on practical, everyday language and includes sections on business phrases and expressions too. It may be of use to language students taking GCSE – but don't expect it to relate to the syllabus.

I haven't had much of a chance to play with them to be honest but my better half has given the French CD a good going over and my six year old has been curiously addicted to the Spanish course. They include sections of straight vocabulary, each section based upon a theme: you click on words and they are pronounced and translated. You can also hear them in context – a native speaker reads out a sentence which includes the chosen word or phrase, the text being displayed in both original and translation. Substantial use is made of 'movies' – you can see the person speaking the words. You could, of course, limit yourself to that but if you want to delve deeper and be more rigorous, there are also full grammar notes available at the click of a mouse.

Criticisms are few, but some exercises are rather over-pedantic. If, for example, you type in a phrase correctly but omit an accent, you'd expect to be told off. However you are also marked down if you forget a capital letter or even a comma. Until you know precisely what the exercise wants, that can be frustrating. Again, the software is oriented towards Americans. When you boot up the Spanish programme and expect to see a map of Spain, you actually see Mexico.

From the technical standpoint there were no problems loading it (I've tried the French and Spanish versions) under Win95 and they should be equally suitable for 3.x. They run well. The sound is mostly very good, though it appears to be out of sync with the video much of the time.

The main problem is with compatibility: if you had a 'real' PC with a record capable soundcard, this programme allows you to record your answers and claims to be able to recognise whether you have spoken the right word or not. It will even comment on your accent. How good this is I don't know but a word of warning – I tried pressing the record button and everything locked solid. So don't.

Aleph One tell me there may be a way to get the record function working even though it's not supported by *!PC*. I'll let you know if I succeed as it could be useful, not only for individuals but for schools and possibly for other software too.

!PC news

In my last column I announced that the new *!PC* would be available and would be called *!PC 96*. It has been renamed *!PC Pro* which won't date, and is now shipping. I've installed the beta version manually, but the full release should be a doddle as it includes an installer.

As promised it's the first version of *!PC* to support Windows 95 properly, and so far I've no complaints on that score. It fixes several bugs, includes faster screen drivers and supports shared memory options that increase the speed of the software markedly. I've noticed a definite improvement in my machine. It's tricky to be absolute about speed improvements, but loading times for large disc based programs (eg Word) has dropped by about 15 per cent, with all other settings unchanged.

Incidentally an extra 8M (to 16M) allocated to the card makes a similar, additional improvement.

It may not seem a huge amount, but in practise everything is noticeably quicker – animations, for example, are much smoother, and games requiring sound and animation are far less fragmented than they were. So far I haven't altered my drive_c to Direct SCSI which should make it faster still.

Aleph One Tel: (01223) 811679

Tip of the day

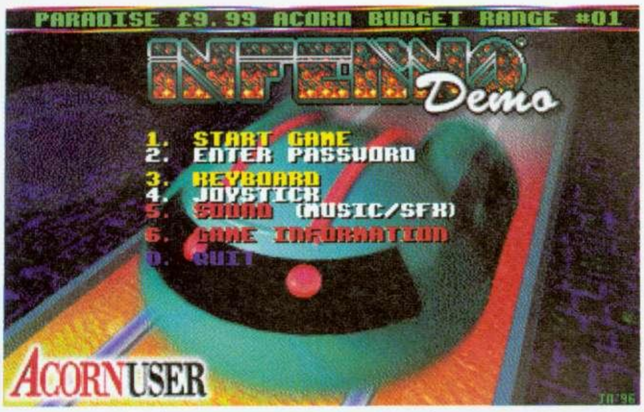
Microsoft's Word comes up with a tip for the day, usually it's something vaguely useful about how to improve your technique with Word. The other day it helpfully suggested I should be careful with scissors – they can be dangerous! Thanks Uncle Bill, I never knew that.

Contacting me

You can contact the PC page by writing to me, Mike Buckingham, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield, Cheshire, SK10 4NP, or e-mailing to aupcpage@idg.co.uk

Inferno

Paradise



It's a race against time to damp down the nuclear core that's going critical by passing over it and spraying it with your craft's special extinguisher. Once the area has been cleared the teleporter must be found to exit to the next level.

Along the way you will encounter the plant's service robots, security robots and defence systems which will have to be overcome. Different units are known to behave in different ways to intruders.

Power-ups such as lasers, a booster, better extinguishers, shields and coolant may be collected to enhance the craft. There are many bonus objects and you'll have to find out what they do yourself.

Controls

You can set the keyboard or joystick controls from the main menu but once in the game you also have:

F1	Pause game
F2	Display area map
F3	Abort mission

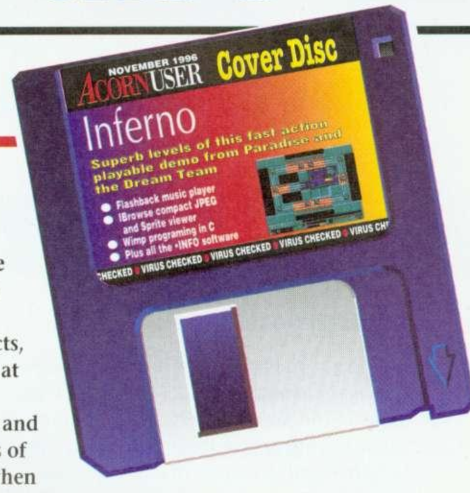
Power-ups

Electron shield which gives your craft a short period of invincibility.

Area coolant jar cools the immediate area giving a little more of the precious time needed to complete the mission.

Turbo thruster upgrade so you can move faster.

Plasma laser upgrade gives the craft even more powerful blasts that can travel through solid objects, only three can be carried at any one time.

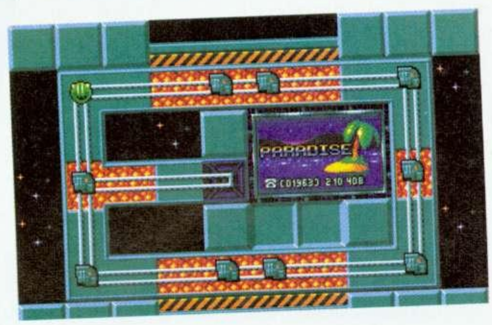


Coloured keys activate and deactivate security beams of the appropriate colour, when lit the key display shows that the corresponding security beams have been deactivated.

Hints and tips

- All the core in an area must be extinguished before the teleporter becomes activated.
- Attempt to find the most effective route through each area to save time.
- Learn how to outwit droids and robots in the plant.
- Save the area coolant jars and extra energy cells until they are really needed.
- Avoid collecting multiple plasma laser upgrades as you can only store three of them.
- Use electron shields wisely.

Inferno is a budget game and you can get the full version for just £9.99 (cheques payable to *David Flynn*) from Paradise, 12 Kings Close, Longburton, nr Sherborne, Dorset.



Processor Vector Module

Stephen Harrison

The purpose of this small module is to add a new, very useful SWI to the operating system. This SWI is & 69,OS_ClaimProcessorVector, and allows programs to 'legally' take over the hardware vectors handled by the processor, such as the SWI vector and abort vectors.

This SWI is available in RISC OS versions 3.5 and later, but users of RISC OS 3.1 and RISC OS 2 cannot easily duplicate it's function and are left to fend for themselves – this usually results in incompatible code being created which will not work on newer machines, and causes many problems.

The details of SWI OS_ClaimProcessorVector can be found in Volume 5 of the RISC OS 3 PRMs, and are duplicated in the 'SWIdetails' file with this module on the cover disc.

Disc information

The software on these discs has been compressed using *ArcFS 2* from VTi, and are opened by running a copy of *ArcFS* then double-clicking on the archive to open it. There is a copy of *ArcFS* on each disc.

Most software will run straight from the archive, but some programs may need to be copied out of the archive before being run, uncompressing them in the process. Any program that saves a file to disc, for instance, will be unable to do so into the archives on the disc.

Faulty disc?

If your disc is faulty, test whether it will verify by clicking with Menu on the floppy drive icon and choosing Verify. If it fails to verify or is physically damaged you should return it to *TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH.* If it verifies successfully return it to the *Acorn User* editorial office at the usual address.

The *Acorn User* cover disc has been checked for viruses using *Killer* version 2.401 from Pineapple Software.

Cover disc

Flashback music

Stephen Harrison

This program was written in response to a plea in the software request section of the excellent *Acorn User* PD column in the July '96 *Acorn User* magazine.

Background

Anyone who has played the Acorn version of *Flashback*, and has seen the versions available on the Amiga and PC will have noticed there is a big difference in the music. The original Amiga version of *Flashback* has excellent music, sound, graphics and gameplay. The Acorn conversion has equal gameplay and better graphics (VGA support) but is sadly very lacking in the sound department – which just happens to be one of the most important parts of this game.

An example of the poor playing of the music in the Acorn version is the background music to the loading intros. If you have not seen the other versions you won't know that the US Gold title page is meant to appear in time to music, not seemingly randomly to a buzzing noise, as in the Acorn version.

The cause of the problem is the music player. The play routine used in the Acorn version of *Flashback* was probably writen by the game's author – which is always a bad sign, games authors should stick to games, and let music player authors handle the music.

Solution

Luckily all is not lost. The music files stored in the *Flashback* game, although altered, still contain most of the original data from their original ProTracker format, and with a little effort can be converted back to their original glory.

This program, *!FBackQTM*, does just this, and converts all the music played in the game, while it is running, into their original ProTracker format – fixing badly converted effects and volumes as it goes, and sends the results to the best ProTracker music player available for your computer, QTM, Q The Music.

Jingles in the game, although much more altered in the Acorn version, are converted back to ProTracker format too, and are played by QTM using it's *transparent sound system* which allows *Flashback's* sound handler to play all the sound effects through the music as well.

The result is a much better game. *Flashback's* intro sequences are now perfectly timed to the music just as on the Amiga, and the whole game benefits from in-tune music, with much better timing and syncronisation.

How to use !FBackQTM

To play Flashback with the new, correct, high quality sound simply run this application, then run the Flashback game! Hard disc users can simplify this even more by copying *!FBackQTM* into the same directory as !Flashback, double-clicking *!FBackQTM* will then load the patch and run the game as well.

Note: This program only alters memory contents and does not modify any files in the *Flashback* game, so it won't alter your original discs.

Apologies to 1Mb users, deeply sorry guys, this won't run on 1Mb. Well it will run, but *Flashback* won't run with it, if you see what I mean. Maybe you should consider getting 2Mb? But if you've managed to survive so far with only 1Mb, you probably don't need two.

This program will definitely run on RISC OS 3.0 and above, but has not been tested on RISC OS 2, as my RISC OS 2 test-computer only has 1Mb, but it should run. If it doesn't I will release an update to do so as soon as someone tells me about it.



IBrowse

David Thomas

IBrowse is a Sprite and JPEG image viewer for RISC OS computers equipped with the SpriteExtend module version 0.99 or later. This version of the module is built into RISC OS 3.6 and is available as a soft-loadable module for RISC OS 3.5 machines.

IBrowse was created to run in as little memory as possible, for this reason it doesn't provide some of the less-used features of image viewers such as scaling the view, 'slideshowing' etc. However, it does support app-to-app transfer of images and performs excellently in its capacity as a fast way to view images.

Drag a Sprite or JPEG file to the *IBrowse* icon bar icon. A window will open displaying the file. Also, double-clicking on a Sprite or JPEG file when IBrowse is loaded will load it.

In addition to the standard Info and Quit entries on the icon bar menu, there is also a 'Choices...' entry which, when selected will open the choices window which allows you to set the types of dithering used on the display:

Sprite Choices

• *Simple dithering* uses a simple patterning technique in most modes which helps lessen the banding effect you get when you display deep sprites in paletted modes. My preference is to leave this option off, as it seems to make sprites look worse in certain cases. (Note that the patterning technique will not always appear immediately on the display. Sometimes a change of screen mode is needed to 'kick' it into action.)

• *Load on double-click* will make IBrowse respond to double-clicks on sprite files, which it will automatically load. This option is off by default as most sprite files will have more than one sprite in them and IBrowse will only display the first.

JPEG Gathering

• *No dithering* performs no dithering so the image may look banded in 256 and less colour modes. However, it is the quickest display method.

• *Simple dithering* uses a simple patterning technique in most modes which helps lessen the banding effect.

• *Error diffusion* is the slowest display method but provides a much better quality of display. This method only works for 256 colour modes, in other colour depths this is equivalent to Simple. It is the default. It is worth noting that even with error diffusion, in paletted modes the display quality will never be as good as that produced by ChangeFSI. Use ChangeFSI if you're converting an image permanently to a sprite.

A menu is available from the display window which allows you to open the Choices window as outlined above, also it allows you to access an information window which provides details about the image such as the resolution and depth.

IBrowse will use a Dynamic Area for storage of the image and is compatible with Clare's *Virtualise* package. Information on obtaining the module can be found in the *IBrowse* help file.

Regular items

•Mike Cook's audio channel selector

•Steve Mumford's Wimp C series creates a simple database application

•David Matthewman's HTML page examples

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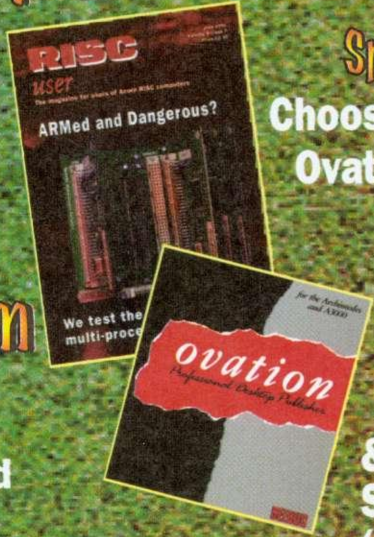
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Acorn World '9

This year's Acorn World is really something to look forward to. There's been so many changes over the last year and there's now so much to look forward to that it's sure to be a busy and exciting few days. For a start, the location has changed. This year, Acorn World is to be held at Olympia 2 from November 1-3. Over the next few pages you'll find details of how to get to the exhibition, as well as a preview of what's happening. There's a stand guide, floor plan and details of theatre presentations, seminars and demonstrations. Everything you need to plan your day at Acorn World 1996.

Getting there

London

Underground: Take the District or Piccadilly Line to Earls Court. A connecting District Line service operates from Earls Court to Olympia at 10-15 minutes intervals.

Bus: Olympia 2 is on several bus routes Zone 1. The numbers 9, 9A, 10, 27, 28 and 49 will get you there.



Rail: Adjoining Olympia is Kensington Olympia rail station which provides an Inter-City link for fast through train services between Manchester-Birmingham-London-Gatwick-Brighton-Dover. The North London Line also provides a link from Clapham Junction Kensington Olympia Willesden. Main line stations are linked to Earls Court Olympia by the underground network.

Car: If you're driving to the show Olympia is close to the M3, M4, M25 and M40/1. Via the M25 there are connections to the M1, M2 and M11. There are several car parks at Olympia in which you can pre-book a parking space. These need to be booked at least 7 days in advance of the event using your Access or Barclaycard. Freephone 0500 845800.



The Acorn User's stand 92

Great Ormond Street Children's Hospital Fund

The Acorn User stand

Acorn User is in its thirteenth year and is still the best selling Acorn magazine in the world. They'll be a selection of back issues as well as the latest issue on sale. We'll also have *Acorn User* binders to keep your collection in – so why not treat youself? Make our stand your first stop, meet the team and if you're not already a subscriber it's your chance to sign up and take advantage of our special show subscription offer. See us on stand 92.

AU Lucky Dip – Stand 218

Feeling lucky – then make your way to the *Acorn User* lucky dip stand. Each turn is £1, then just dig deep into the tub – there's a whole host of prizes, big and small, to be won. All money is going to the Great Ormond Street Children's Hospital Fund, so come along and support this worthy cause. Prizes have been kindly donated by exhibitors at Acorn World. And if that isn't tempting enough there's one StrongARM upgrade to be won each day.

Innovation, Education & Entertainment

Acorn World organisers EPS Events have received an overwhelming response from exhibitors wishing to launch new products at the exhibition. "There is more innovation in this year's show than at any previous event" said Stephen Bozdan of EPS.

Acorn RISC Technologies

At the centre of the new developments is ART, whose introduction of the superfast new StrongARM card has provided the computing power to drive many of the new applications. ART will be demonstrating the new processor in Risc PCs on the stand and will be presenting StrongARM upgrades as competition prizes every half hour throughout the show.

A complete SA-equipped Risc PC will be presented to the winner of a 'Lucky Key' competition run in conjunction with *Byte* magazine, and show sponsor *Acorn User* will have StrongARM upgrades among the many lucky dip prizes. For those not lucky enough to win one, StrongARM will be on sale to the public for the very first time from the Centres of Technology exhibiting at the show.

The new NetStation computer is now a reality, and production models rather than technology prototypes will be available for trial on the ART stand (85), centrally located and shared with Xemplar on the ground floor of Olympia 2. A prototype of 'Newspad', described as a personalised electronic newspaper with A4 touch-screen technology, will also be on show. Members of the ART team will be on hand throughout the exhibition to answer enquiries and demonstrate the new products.

Theatre programme – Education

On Friday November 1 – 'Education Day' – the theatre will be dedicated to a series of seminars aimed at educational visitors, teachers and schools IT buyers, and a balance between primary, secondary and special needs subjects has been achieved.

Most speakers are either involved in mainstream education, or have been 'front-line' IT teachers.

Theatre programme – Developers

On Saturday November 2 and Sunday November 3, the exhibition is 'handed back' to Acorn's enthusiastic band of home, professional and specialised users. A wide range of topics and demonstrations cover DTP and graphics; music making and publishing; statistics; the Internet and a new application which renders the Risc PC capable of running more software than any other commercially available desktop machine.

Saturday will see five of the leading 'players' in Acorn DTP – Mike Williams of Akalat Publishing; Tony Tolver of T-J Reproductions; Richard Lambley, Editor of *Land Mobile* magazine; Trevor Hutton, DTP Professional of First Impression; Majid Anwar of Alternative Publishing – presenting everything you need to know about using Acorn RISC OS computers in design, software, layout and imagesetting/printing.

Geoff Titmuss of Softease will be demonstrating the very latest version of the acclaimed DTP software – *Textease* – called *Multimedia Textease*. Learn how to lay out pages and incorporate text, images, sound and Replay films.

Sibelius is known throughout the world as the finest music publishing software available. Jo McCulloch of Sibelius will be demonstrating all the versions including the latest feature – Flexi-time which allows *Sibelius* to use MIDI to input and notate what you play.

'More software for RISC OS than for

96 Show Guide


Whale watching


Cybercafè


Crèche

Windows' is the bold claim from ARMEDForces Software who will be launching *WINRisc*. Chris Claydon will be showing how PC software can be used in the RISC OS desktop environment, as long as you have a PC card or podule installed.

Chris Cox of ART will be presenting StrongARM – its history, the upgraded operating system, installation, in fact, everything you wanted to know about StrongARM but were afraid to ask.

Dave Clare, that stalwart of the Acorn community will be presenting PCA – Plug-in Compliant Applications. This is not limited to Clares products and is being supported by various Acorn developers. It allows conforming applets to be 'plugged' into any conforming application. Dave will also be demonstrating Wimp Basic – a programming environment that allows quick and easy creation of WIMP applications. Both segments will be of interest to the user and programmers among the Acorn flock.

Mark Perry of Oregan Developments will be demonstrating *ProSound* and *CineWorks* software packages as well as their own (and others) hardware packages. All are designed for the latest in Digital Audio and video editing.

One of the longest established software houses is Serious Statistical Software and Robin Edwards will be demonstrating the latest versions of the only true statistical software available to users of RISC OS machines. SSSs market is predominantly schools, but there are also users in universities and colleges as well as many NHS hospitals.

Lyndon Couch of Beebug will be demonstrating some (if not all) of the amazing features of *OvationPro* – some features will be unveiled for the first time at Acorn World.

Dalriada have developed many useful applications over the last few years and George Buchanan will be introducing *Spider* – a new WYSIWYG-ish HTMLEditor as well as the latest version of *TableMate – TableMate Designer*, which does for WWW Internet pages tables what the original did for paper based publishing.

Ever seen any of Walter Briggs 'painting' creations? Want to know how it was done? Here is your chance – Walter Briggs will be demonstrating how to use *Studio24Pro* from Pineapple Software. Come and see the 'Master' at work.

ESP and Dr Andy Pierson will be showing the latest in sound processing using a StrongARM-equipped Risc PC. They will also be presenting updates and extensions to Synthesiser. Interested in MIDI? Andy expects that ESP will have a school based product ready to both demonstrate and sell.

Education Day theatre itinery

Friday November 1st
10.30 - A School's IT Framework - Dick Wallin - Xemplar - Primary/Secondary
11.30 - IT in Special Needs - Paul Nuttall - SEMERC - Primary/Secondary
12.30 - Managing IT across the Curriculum - Alastair Wells - Secondary
13.30 - StrongARM for the Risc PC - Chris Cox - ART - Primary/Secondary
14.30 - Pe-School IT - Paul Nuttall - SEMERC - Primary
15.30 - The Community Superhighway - Alastair Wells - Primary/Secondary
16.30 - Primary Networking - Alan Bennett - Xemplar - Primary



Other features

Parents with young and school age children are not forgotten at AW96. Dr Maggie Holgate and her colleagues at the 'Parents' Information Network (PIN) will have a stand at the show, and they will be presenting a seminar on using computers at home with young children. While important now, with the increasing use of computers with ever younger children at school, this will become vital as the spread of the network computer puts IT in every home in the land.

Whale watching

The 'TIC.TOC' project, supported by Acorn and BT Campus World will enable visitors to the exhibition to link up live to schools taking part in a remarkable worldwide adventure. The name is derived from the title: 'The International Challenge – Tropic of Cancer', and it is an 18 month expedition around the wörld involving children in the 18 countries visited in environmental and wildlife projects, and encouraging them to raise money by sponsorship in support of cancer charities.

The epic journey will have started in October, and the expedition's vessel the *Creightons Naturally* will be well into the first project, tracking the migratory movements of sperm whales, aided by Dominican school children using IT equipment supplied by Acorn. Visitors to AW96 will be able to link up to the expedition and talk on the Internet to the expedition members and the schoolchildren as they follow the whales.

Exhibition times

10.00 - 18.00 Friday 1 & Saturday 2 November
10.00 - 17.00 Sunday 3 November

Buying tickets

Adults: £5 advance, £7 on the door
Children: £4 advance, £5 on the door
Family: £16 advance, £20 on the door
Advance booking hotline: 0701 0709 909

Cybercafé

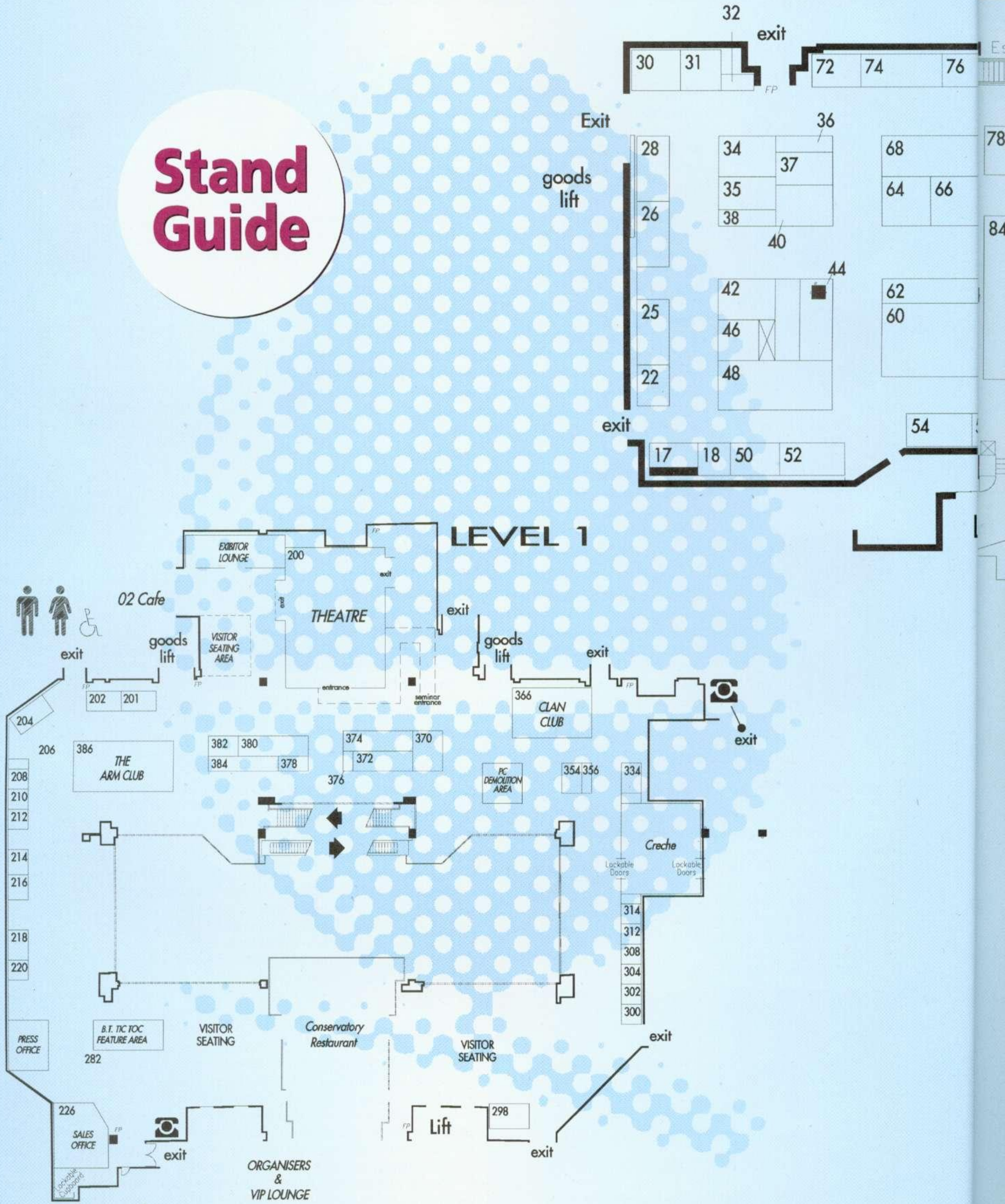
No Acorn World can take place without a Cybercafé, now a regular feature, and often the first 'hands-on' contact with the World Wide Web for many visitors. With so many new Internet applications being demonstrated and launched at the show, this year's Cybercafé will be an interesting experience for novices and old WWW hands alike.

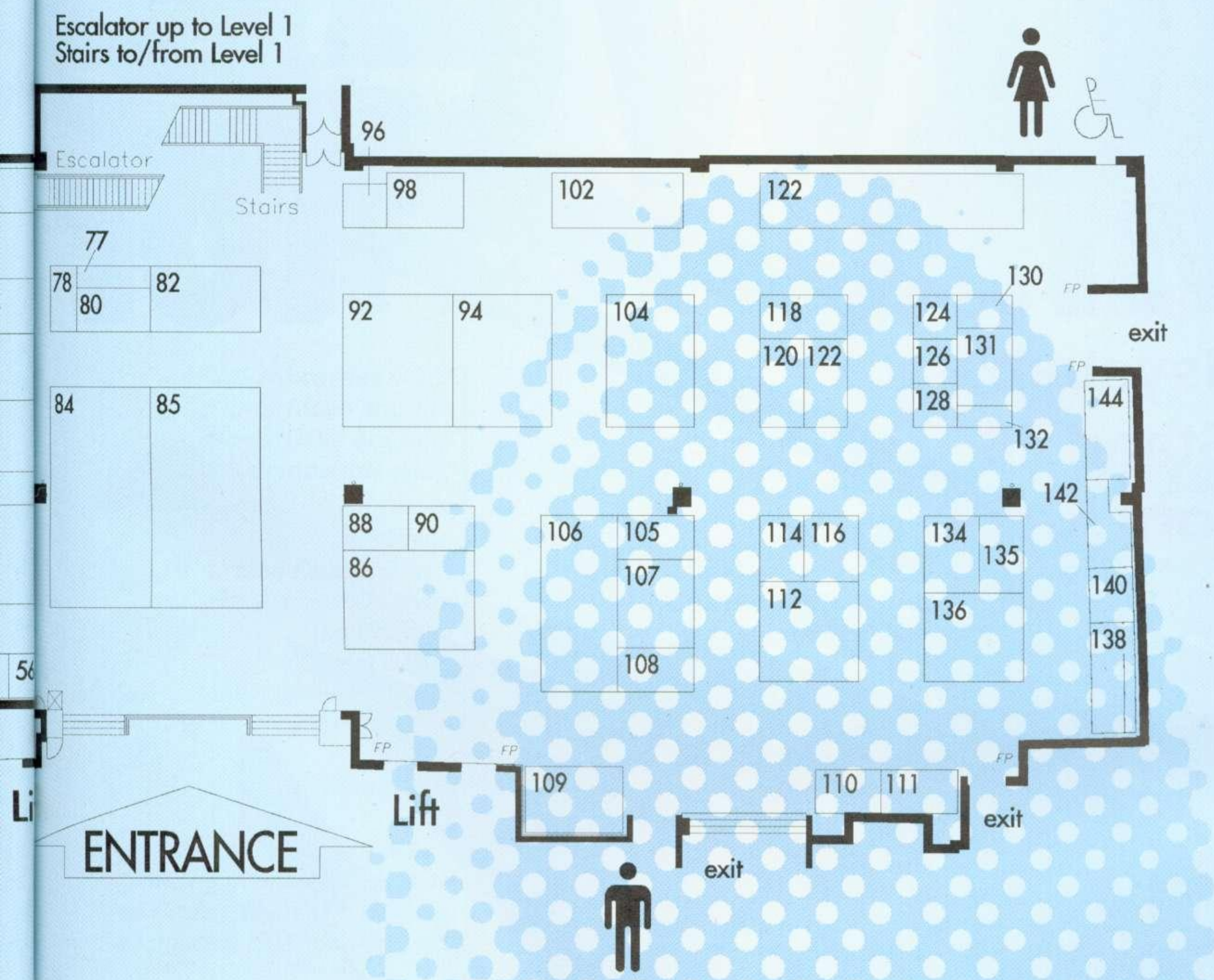
Crèche

Popular demand has ensured that the crèche facilities will be offered for families with children too young to take an interest in the exhibits, or just too tired to 'keep on truckin', and Olympia's extensive restaurant facilities and rest areas should ensure a more relaxed event for all.

As this article went to press, more developers were contacting the organisers with news of innovations for the show. Watch the AW96 website on *http://www.eps-events.com/ acorn-world* for the very latest information.

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&
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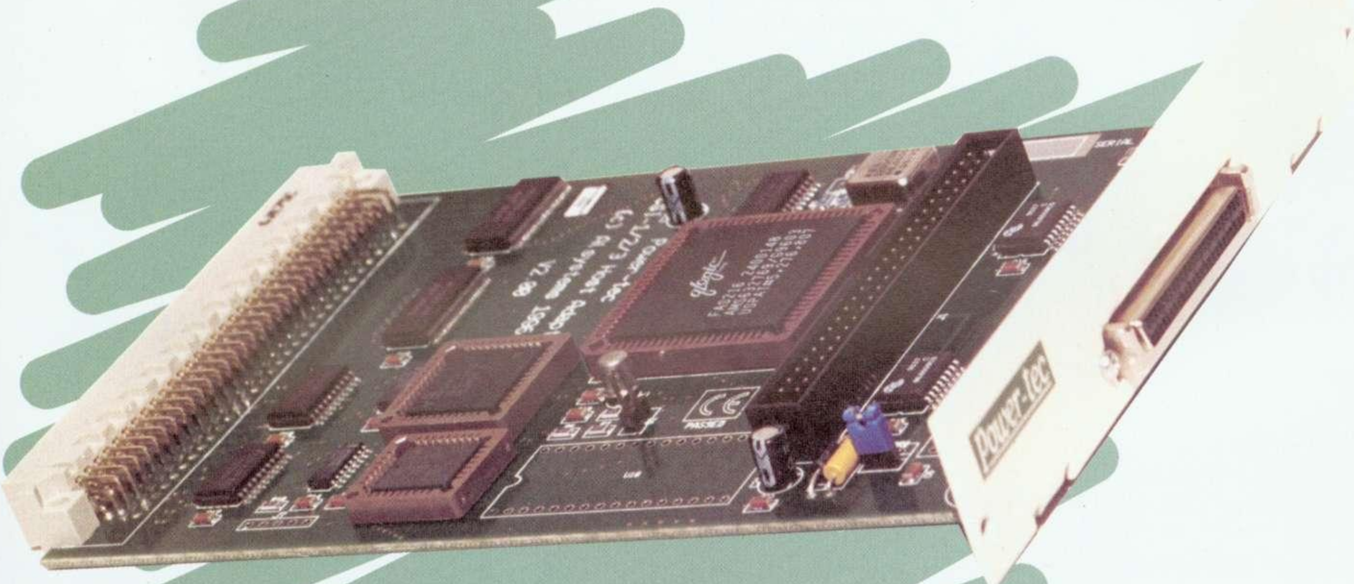
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Now fully StrongARM™ and RISC OS 3.7 compatible.

Power for

Available from Alsystems Stand 68 Acorn World



£175

32-bit DMA Transfers
Direct DOS Formatting
Create **16 GB** partitions
with RISC OS 3.6/3.7

Power-tec

Fast SCSI II

" No other SCSI card has the functionality of the Power-tec Fast SCSI II "

The companies involved

4th Dimension

Stand 354
1 Percy Street
Sheffield S3 8AU
Tel: 0114-276 9950
Fax: 0114-278 1091
E-mail:
4D@rsenter.demon.co.uk
Bargain hunters will be happy to learn that 4D will have a large selection of their games, complimented by the 10 out of 10 educational range, on sale at unbeatable prices. Also you can find out more about our imminent move.

10/10

(See 4th Dimension)

Abacus Training

Stand 116
29 Okus Grove
Upper Stratton
Swindon
Wiltshire SN2 6QA
Tel/fax: (01793) 723347
Get the best out of *Fireworkz*, *Pipedream* or *Impression* by joining Zline, Pipeline or ILine. User group members receive a free technical help service and regular discs containing articles written by experts for experts and others written specially for beginners.

Acorn Archimedes World magazine

Stand 74
Nexus House
Boundary Way
Hemel Hemstead
Herts HP2 7ST
Tel: (01442) 66551
Fax: (01442) 66998
Acorn Archimedes World is the magazine for all RISC OS users, whether your interests lie in business, home or educational use. Each issue is packed with information and advice you cannot afford to miss.

AJS Computers Ltd

Stand 230
Millstone Houses
51/53 Heath Drive
Chelmsford
Essex CM2 9HE
Tel: (01245) 345263
Fax: (01245) 345233
E-mail:
sales@ajscomps.demon.co.uk
Memory upgrades. Hard disc upgrades. Second hand equipment. Printers. CD-ROMs. Monitor upgrades. Mice. PC Card exchanges. Computer exchanges to Risc PC. Second hand hard drives, monitors, computers, podules, printers.

Akalat Publishing

Stand 124
P.O.Box 231
Barton
Bedford
MK45 4HQ
Tel/fax: (01582) 881614
E-mail: akalat@kbnet.co.uk
The stand will feature *Acorn Publisher*, the magazine for all DTP users now in its third year of publication. On sale will be the latest issue, a full range of back issues, books on desktop and electronic publishing (the Internet), plus special offers for new subscribers. Staff will also be on hand to offer help and advice on DTP matters.

Aleph One Ltd

Stand 94
The Old Courthouse
Bottisham
Cambridge
CB5 9BA
Tel: (01223) 811679
Fax: (01223) 812713
E-mail: sales@aleph1.co.uk
Web:
http://www.aleph1.co.uk
Aleph One will be showing *!PCPro*, an upgrade to the software which controls PC second processor cards. 5x86 cards can perform up to 54 per cent faster, and VESA drivers allow more DOS games to run on the card. Also on display is Network Links for PC card network connectivity.

Alsystems

Stand 68
47 Winchester Road
Four Marks
Alton
Hants GU34 5HG
Tel: (01420) 561111
Fax: (01420) 561100
E-mail:
sales@alsys.demon.co.uk
Web:
http://www.alsystems.co.uk
Alsystems has some exciting new hardware products being released at the show. As well as the Power-tec SCSI II card, the PowerROM will be available together with hard disc drives and lots of StrongARMs. Also being released will be the NEC 4x4 CD ATAPI multichanger with Acorn driver.

Alternative Publishing Ltd

Stand 90
30 Clyde Place
Glasgow G5 8AQ
Tel: 0141-418 0880
Fax: 0141-418 0881
E-mail: sales@alt-design.co.uk
Alternative Publishing will be releasing an update to its ever popular *ImageFS* graphics utility. Improvements include added bitmap formats, including JPEG, and vector graphic support such as Window metafiles. Also on display will be AP's specialist Acorn bureau and printing services.

Anglia Multimedia

Stand 122
Anglia House
Norwich NR1 3JG
Tel: (01603) 615151
Fax: (01603) 622191
E-mail:
angliamail@asl.com
Web:
http://www.anglia.co.uk
Exciting new CD-ROMs from Anglia this year include, *Romans, Survival: Mysteries of Nature, Being a Scientist*, and *Eureka: An Encyclopedia of Discoveries & Inventions*, 20 per cent discount on all CD-ROMs bought at the show.

ANT Ltd

Stand 94
PO Box 30
Cambridge CB2 2EG
Tel: (01223) 567808
Fax: (01223) 567801
E-mail: sales@ant.co.uk
Web: http://www.ant.co.uk
Come and surf the Internet using the ANT Internet Suite Release II. New features include an updated version of the Fresco browser based on ANT's work on the NC project, and a new version of the Marcel mail and news utility with improved support for offline newsreading and multiple mailboxes.

APDL

Stand 28
39 Knighton Park Road
Sydenham
London SE26 5RN
Tel: 0181-778 2659
Fax: 0181-488 0487
E-mail: info@apdl.co.uk
APDL will have our full range of PD software and CDs at special show prices. Plus hard discs, interfaces, and CD drives at even lower cost that usual. Even if you don't buy anything come and pick up a catalogue.

Apricote Studios

Stand 77
2 Purls Bridge Farm
Manea
Cambs PE15 0ND
Tel/fax: (01354) 680432
Version 3 of *Prophet*, the acclaimed small business accounting application will be launched at the show. *Personal Accounts* and a new version of our popular *Shares* program will also be on show. AND... don't miss our very special show offers.

Archive

Stand 62
96a Vauxhall Street
Norwich NR2 2SD
Tel: (01603) 766592
Fax: (01603) 764011
E-mail:
sales.NCS@paston.co.uk
Web: http://www.cybervillage.co.uk/acorn/archive/
Archive magazine, simply the best enthusiasts' magazine for Acorn computers. Articles written by enthusiasts for enthusiasts. Come and support our charity fund-raising effort. Buy second hand hardware and software – bring some for us to sell, too.

ArgoNet / Eclipse / VTi

Stand 102
Unit 1 The Shopwhyke Centre
Shopwhyke Road
Chichester PO20 6GD
Tel: (01243) 531194
Fax: (01243) 531196
Email: sales@argonet.co.uk or eclipse@argonet.co.uk or vti@argonet.co.uk
Web: http://www.argonet.co.uk or http://www.argonet.co.uk/eclipse or http://www.argonet.co.uk/vti
ArgoNet will be selling the latest version of their Internet software and the new 33.6 Voice modems from US Robotics, as well as selling CD-ROM, hard disc and zip drives plus samplers and other hardware from VTi and exciting games from Eclipse.

ARMed Forces Software (AFS)

Stand 384
38 Main Road
Littleton
Winchester
Hants SO22 6QQ
Tel: (01962) 880591
Fax: (01962) 880003
E-mail:
sales@afsoft.demon.co.uk or support@afsoft.demon.co.uk
Web:
http://www.afsoft.demon.co.uk/
AFS will be selling our major new release – *WinRisc* which seamlessly integrates Windows software on the PC card into RISC OS, so it almost becomes RISC OS software. We will also be selling our RSDFS Teleworking and low-cost networking systems.

Atomwide Ltd

Stand 94
7 The Metro Centre
Bridge Road
Orpington
Kent BR5 2BE
Tel: (01689) 814500
Fax: (01689) 814501
E-mail:
Sales@atomwide.co.uk or Support@atomwide.co.uk
Web:
http://www.atomwide.co.uk
Atomwide will be demonstrating a range of network solutions, from peer-to-peer systems with just a few stations, to comprehensive site-wide configurations including Internet access. Upgrades including High Speed Serial Cards, drives

and memory will also be available at special prices.

AVP

Stand 54
School Hill Centre
Chepstow
Monmouthshire NP6 5PH
Tel: (01291) 625439
Fax: (01291) 629671
E-mail: 100441.130@compuserve.com
At a special discount AVP will be selling their educational *PictureBase* CD-ROMs. This series is the largest range of integrated Acorn educational CD-ROMs available. These National Curriculum CDs will prove invaluable to anyone at primary school or studying for GCSEs.

BEEBUG Limited

Stand 60
117 Hatfield Road
St Albans AL1 4JS
Tel: (01727) 840303
Fax: (01727) 860263
E-mail: sales@beebug.co.uk
BEEBUG will be displaying *Ovation Pro* in all its glory. RISC User magazine (now in its 10th year) will be there so pick up a copy. We'll have a special demo of Audio Dynamics DMI cards, be selling computers and much much more. Our stand is definitely where it's at.

Caiti Software

(See Wyddfa Software)

Cambridgeshire Software House

Stand 128
PO Box 163
Huntingdon
Cambs PE17 3UR
Tel: (01487) 741223
Fax: (01487) 741213
E-mail: 106066.2173@compuserve.com
Our new range of early year's software will be on show including a multimedia 'Talking Book' designer. In all, there will be four new programs to see.

Castle Technology

Stand 82
Ore Trading Estate
Woodbridge Road
Framlingham
Suffolk IP13 9LL
Tel: (01728) 621222
Fax: (01728) 621179
E-mail: sales@castle-technology.co.uk
Web: http://www.castle-technology.co.uk/
The following Castle Technology products will be available at special Show prices: Hard Drives (SCSI and IDE), CD ROMs (SCSI&IDE), scanners (SCSI), monitors, floppy disc drives, mice, memory, computers (A3010, A4000 and Risc PC), removable (Syquest Zip etc), keyboards, backplanes, SCSI II Interfaces, IDE Interfaces, SCSI/network interfaces etc.

Circle Software

Stand 50
P.O. Box 36
Bodmin PL30 4YY
Tel/Fax: (01208) 850790
E-mail: sales@circlesw.demon.co.uk
Circle Software are featuring three new versions of their popular *Impact* database program. These include a Junior version, an upgraded version of the existing *Impact2*, and a new version having powerful macro functions for the professional user.

CJE Micro's

Stand 26
78 Brighton Road
Worthing
West Sussex BN11 2EN
Tel: (01903) 523666
Fax: (01903) 523679
E-mail: cjemicro@pavilion.co.uk
Web: http://www.art.acorn.co.uk/coft/CJE/
A wide range of Risc PC's and upgrades, including Fast CD-ROM drives and very well priced Risc PC and A7000 memory will be on sale. CJE Micro's will be demonstrating the 'Fastest Risc PC PC Card' available for the Risc PC, the AMD 5x86 133MHz.

Clares Micro Supplies

Stand 48
98 Middlewich Road
Rudheath
Northwich
Cheshire CW9 7DA
Tel: (01606) 48511
Fax: (01606) 48512
E-mail: sales@clares.demon.co.uk
Web: http://www.stcoll.ac.uk/clares/
Acorn World 96 gives you the opportunity to view the latest products for RISC OS. Latest versions of *Composition* and *ProArtisan 24* will be on show which utilise PCA, the latest development for all Risc PC users. Come along to stand 102 and find out more.

Colton Software

Stand 116
7 Signet Court
Swann's Road
Cambridge CB5 8LA
Tel: (01223) 311881
Fax: (01223) 312010
E-mail: colton.info@prot.demon.co.uk
Colton Software are proud to present a revamped *PipeDream 4* and new updates of *Fireworkz* and *Fireworkz Pro* which take full advantage of Acorn's powerful StrongARM technology.

Computer Concepts Ltd

Stand 106
Gaddesden Place
Hemel Hempstead
Herts HP2 6EX
Tel: (01442) 351000
Fax: (01442) 351010
E-mail: info@cconcepts.co.uk
Web: http://www.cconcepts.co.uk
Computer Concepts will be demonstrating and selling their complete range of publishing and multimedia products, including the new StrongARM versions of *Impression*, *ArtWorks*, and Turbodrivers, and the latest printers from Canon.

Cumana

Stand 52
Boundary House
The Pines
Broad Street
Guildford
Surrey GU3 3BH
Tel: (01483) 503121
Fax: (014830) 451371
E-mail: sales@cumana.co.uk or support@cumana.co.uk
Cumana will be showing OSCAR, its unrivalled performing Parallel Port CD-ROM drive. Also on show will be the highly successful proTeus combined CD and optical drive as well as other Cumana peripherals such as our fast SCSI 2 32bit Interface card.

Dalriada Data Technology

Stand 114
74 Greville Road
Warwick CV34 5PJ
Tel/fax: (01926) 492459
E-mail: sales@dalriad.demon.co.uk
Web: http://www.dalriad.demon.co.uk/
Dalriada will be releasing the latest version of their popular table editor *TableMate*. *TableMate Designer* provides a significant leap forward in the number of facilities *TableMate* offers. Three other releases are on their stand, plus a preview of their World Wide Web software.

Davyn Computer Services

Stand 22
The Workshop, off Princess Street
Wakefield
West Yorks WF4 1PG
Tel: (01924) 210100
Fax: (01924) 258036
E-mail: martyn@davyn.demon.co.uk
Davyn Computers will once again be showing RiscCAD, their 2D CAD package, being shown for the fourth year in succession. Improvements include multi-thickness lines, additional drafting tools and improved plot management. The program author will be on hand to give live demonstrations.

Desktop Projects Ltd

Stand 40
Unit 2A Heapriding Business Park
Ford Street
Stockport
Cheshire SK3 0BT
Tel: 0161-474 0778
Fax: 0161-474 0781
E-mail: sales@desktopp.demon.co.uk
WWW: http://www.desktopp.demon.co.uk/
Desktop Projects will be selling Risc PC's, SIMM's, ATAPI/SCSI CD-ROM drives, Removable Drives, Psion pocket computers, Printers, Modems, Multimedia Speakers, CD-ROM titles, and other software. We will also be selling our own *QuickLynk*, *QuickTile* and *TopicArtCD*.

DoggySoft Ltd

Stand 80
Furzefield House
Furzefield Road
Beaconsfield
Bucks, HP9 1PQ
Tel: (01494) 673222
Fax: (01494) 675878
E-mail: info@doggysoft.co.uk
Web: http://www.doggysoft.co.uk/
DoggySoft will be demonstrating and selling the latest version of the *Termite* Internet communications suite. We will have special show offers on complete packages including software, modems and Internet subscriptions.

Economatics (Education) Ltd

Stand 110
Epic House
Darnall Road
Attercliffe
Sheffield S9 5AA
Tel: 0114-281 3344
Fax: 0114-243 9306
Economatics (Education) Ltd will be exhibiting at Acorn World for the first time. With a wealth of experience in Acorn software development and as leading suppliers of technology teaching equipment, we will be demonstrating Acorn computer control solutions. A range of special packages hae been developed which include Logicator flowsheet control software and Fischertechnik modelling solutions along with teaching materials. Special show offer prices will be available.

Eesox

Stand 134
Suite 8C Newton House
147 St Neots Road
Hardwick
Cambs CB3 7QJ
E-mail: eesox@eesox.demon.co.uk
Web: http://www.eesox.demon.co.uk
Our full, latest range of CD-ROM drives including SCSI, IDE and parallel port drives. CDWriter systems. CDBrick – the alternative to CD-ROM towers for networking CD-ROMs. The latest *CDFast2* CD-ROM caching software. Graphic Tablets and graphic software applications. Memory, SCSI interfaces, and other peripherals.

Electronic Font Foundry

Stand 18
Granville House
50-52 Upper Village Road
Ascot
Berkshire SL5 7AQ

Tel: (01344) 891355
Fax: (01344) 872923
E-mail:
info@efffonts.demon.co.uk
We shall display and sell new and well established fonts in many languages including all European, Cyrilli, Greek, Hebrew, Indic etc. Our expertise in typography and font design is second to none and we are able to design or trace already designed fonts from any source.

ESP

Stand 46
21 Beech Lane
West Hallam
Derbyshire, DE7 6GP
Tel/fax: 0115-929 5019
E-mail:
sales@ExSoftPr.demon.co.uk
http://www.cybervillage.co.uk/acorn/esp/
Software Synthesiser with improved instruments and facilities. Extra instruments for the Synthesiser. Synthesiser instrument editor. Parallel Port MIDI Interface. News of developments that provide new MIDI and sound facilities with particular use of StrongARM. PC Card Sound and MIDI updates.

Fabis Computing

Stand 132
48 Charles Street
Church Gresley
Swadlincote
Derbyshire DE11 9QD
Tel: (01283) 552761
Fax: (01283) 552761
E-mail:
info@fabis.demon.co.uk
Web:
http://www.fabis.demon.co.uk
EasyFont Professional will be released at the show with many new features. RRP £59.95 Upgrade for *EasyFont3* users £15 and please bring along your original disc.

Icon Technology Ltd

Stand 64
5 Jarrom Street
Leicester LE2 7DH
Tel: 0116-254 6225
Fax: 0116-247 0706
E-mail:
icon@lccapple.demon.co.uk
Import and export of word documents are among the new features in the versions of *EasiWriter* and *TechWriter* to be released at the Acorn World show. Other improvements include automatic numbering, RTF import and export. Special show offers are available.

Insight Training

Stand 201
PO Box 864
Cambridge CB5 9RX
Tel/fax: (01223) 812927
E-mail:
insight@argonet.co.uk
Web:
http://www.argonet.co.uk/business/insight/
Insight Training offers a growing range of Acorn-based courses. Visit the stand to check out the show offers, buy your own training manuals, pick up your own 1997 training schedule and discuss your IT training needs with Insight.

Iota Software Ltd

Stand 38
Iota House
Wellington Court
Cambridge CB1 1HZ
Tel: (01223) 566789
Fax: (01223) 566788
E-mail: sales@iota.co.uk
Web: http://www.iota.co.uk
Some great offers are available on the Iota stand this year, make sure you don't miss out! From excellent animation software to typing tutors and powerfully easy to use databases, there is something on offer for everyone!

Irlam Instruments Ltd

Stand 98
Brunel Institute for Bioengineering
Brunel University
Uxbridge
Middlesex UB8 3PH
Tel/fax: (01895) 811401
Desktop video systems for TV display, digitising, Replay capture and high-quality video editing will be demonstrated including RiscTV, 24i16 and Videodesk. A complete range of colour scanners will be available from low-cost motorised units to A4 flat-beds. Special offers will be available on selected products.

Kimberley Computers Ltd

Stand 76
73 Chapel Street, Leigh
Lancashire WN7 2DA
Tel: (01942) 677777
Fax: (01942) 672300
E-mail: info@kimberley.com
or sales@kimberley.com
Web:
http://www.kimberley.com
Kimberley Computers will demonstrate Arcshare the Acorn to PC networking program. All the usual items for sale such as Hard Drives, Memory upgrades, printers and consumables at competetive prices. We will also be demonstrating the Casio and Kodak range of digital cameras.

MCS

Stand 370
Baroper Bahnhofstr. 55
44225 Dortmund
Germany
Tel: + 231 759283
Fax: + 231 750455
E-mail: mcsmike@knipp.de
Web: http://www.acebace.de
Connect 32 Fast SCSI card, VRAM upgrades, PC card upgrades from SXL-40 to 586/133. We can exchange cards at the show and update your VRAM from 1Mb to 2Mb as well. We will also have hard discs, CD-ROMs, PS/2 modules.

Oregan Developments

Stand 34
36 Grosvenor Avenue
Streetly
Sutton Coldfield, B74 3PE
Tel: 0121-353 6044
Fax: 0121-353 6472
There's lots to see on Oregan's stand this year. See *Prosound*, a fully integrated eight channel hard disc recording, sound editing and audio processing suite. There will also be the Oregan SPDIF interface and *Cineworks*, now StrongARM compliant and with several improvement as well as demos of early versions of *MIDIWorks* throughout the show.

Pineapple Software

Stand 118
Suite 13/14 South Park
Business Centre
310 Green Lane
Ilford
Essex IG1 1XT
Tel: 0181-599 1476
Fax: 0181-598 2343
sales@pineaple.demon.co.uk
Pineapple will have all its usual products on show with a special feature on colour scanning. Walter Briggs will be demonstrating *Studio24 Pro* and there will be a special release of *Studio24* version 1 at just £29.00.

Q-Tec Technological Resources

Stand 370
Unit 22 Brougham
Enterprise Centre
Brougham Terrace
Hartlepool TS24 8EY
Tel: (01429) 890800
Fax: (01429) 890700
Computer music products: new MIDI interfaces (inc. A4), controller keyboards, modules, active speakers, software. Connect 32 SCSI2 Cards: SCSI devices, All cables standard and customised. Acorn Risc PC systems, StrongARM SCSI 2 systems. Official StrongARM promotional beer glasses!

Quill Marketing

Stand 72
11 Hemmings Close
Norwich NR5 9EH
Tel: (01603) 748002
Fax: (01603) 748003
Jetprint T-shirt transfer papers as well as a full range of ink jet refills, including pigment based inks will be shown. A stand full of creative ideas. Look at Digital Imaging!

R-Comp

Stand 96
22 Robert Moffat
High Legh
Knutsford
CheshireWA16 6PS
Tel: (01925) 755043
Fax: (01925) 757377
E-mail:
htmledit@arsvcs.demon.co.uk
Web:
http://www.arsvcs.demon.co.uk/r-comp/
HTMLEdit2, the acclaimed Web authoring package, will be supported by a stand-alone utilities pack essential for all designers. Try the new ACECAT2 graphics tablet with Acorn drivers. Add life to your PC card with an unparalleled level of SoundBlaster emulation.

RE at Lampeter University

(See Wyddfa Software)

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Stand 78
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Fax: (01509) 672267
E-mail: info@resourcekt.co.uk
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Tel: 0151-327 4268
E-mail: sss@argonet.co.uk
Web:
http://users.ox.ac.uk/~jo95006/first
We shall demonstrate our user-friendly statistical packages *1stL*, *1stJr* and *1st*, priced between £50 and £205 (no VAT), with their excellent graphics and data handling. Widely used in schools and further education they are now handling administrative tasks too.

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Tel: (01666) 840433
Fax: (01666) 840048
E-mail: info@sherston.co.uk
Web:
http://www.sherston.com
Sherston Software will be launching an exciting development at Acorn World '96. *Rusty Dreamer* is the ultimate reading experience

from new Sherston author Mike Matson, this CD-ROM adventure is an ambitious project by any standards. Using a brand new video animation technique developed by Mike, *Rusty Dreamer* brings a new dimension to educational multimedia.

Sibelius Software

Stand 42
75 Burleigh Street
Cambridge CB1 1DJ
Tel: (01223) 302765
Fax: (01223) 351947
E-mail:
info@sibelius.demon.co.uk
Web:
http://www.acorn.co.uk/developers/sibelius/
Sibelius 7 (full professional version); *Sibelius 7 Student* (Semi-professional and A-Level standard); *Sibelius 6* (GCSE standard); *Junior Sibelius* (for absolute beginners). Music software for composing, playing, arranging, recording, teaching and printing music.

Simtec Electronics

Stand 66
Avondale Drive
Tarleton
Lancs PR4 6AX
Tel: (01772) 812863
Fax: (01772) 816426
E-mail:
info@simtec.demon.co.uk
Simtec will be showing their developments which range from new user-expandable VRAM upgrades to multi-processing and multi-threading under RISC OS. They will also be showing their extensive range of memory upgrades.

Smart DTP

Stand 126
36 Park Road
Duffield
Belper
Derbyshire DE56 4GR
Tel: (01332) 842803
Fax: (01332) 842803
E-mail: jamesparry@smart-dtp.telme.com
We will be launching Release 3 of *PublishArt* at the show at a very special show price.

We don't want to say too much here, but we'd love to show you the new package in person. Existing *PublishArt* users will be able to upgrade on the day.

Softease Limited

Stand 378
The Old Courthouse
St Peters Church Yard
Derby
DE1 1NN
Tel: (01332) 204911
Fax: (01684) 772922
E-mail:
sales@softease.demon.co.uk
Softease are launching *Multimedia TextEase*. This allows you to add video, animation and sound to your *TextEase* documents. Whether for fun, for learning or for communication, it will bring your documents to life. Move your communications into the next century with the help of *Multimedia TextEase*.

Spacetech Ltd

Stand 88
21 West Wools
Portland
Dorset DT5 2GA
Tel: (01305) 822753
Fax: (01305) 860483
E-mail:
sales@spacetec.demon.co.uk
Web:
http://www.digibase.com/spacetech
Spacetech will have an announcement at the show about additions to the *Photodesk* range of products. Also it is expected that they will be previewing the new 'Gemini' version of *TopModel* from Sincronia Multimediali of Italy with Paolo Rossi in attendance.

System Insight

Stand 44
Hillcrest House
Shirrel Heath
Southampton SO32 2JS
Tel: (01329) 835500
Fax: (01329) 835501
System Insight will be exhibiting a complete range of inkjet printer consumables, including original cartridges, the renowned range of inkmun cartridge refill systems, a full range of transparency films, 720 and 360 dpi papers and a high quality, low cost gloss paper.

TBA Software

Stand 138
Mead Farm
North Road
Timsbury
Bath
Somerset BA3 1JU
Tel: (01761) 470003
As well as all the usual games and joypads. TBA this year will be selling a new 2-in-1 game pack containing *Mirror Image*, a new TAG stratagy game, and *Merp*, a fun multi-player game. Also on show will be *TBAFS*, a very fast file archive compression system for RISC OS, you'll never need another compression system again! The first public *TAG 2*, the next generation of RISC OS 3D engine, demos will be running on StrongARM processors at the stand. There will also be special show offers for game bundles.

The ARM Club

Stand 386
Woodleigh Lodge
32 Stoughton Lane
Stoughton
Leicestershire LE2 2FH
Tel: 0171-624 9918
Fax: 0181-446 3023
E-mail:
treasurer@armclub.org.uk
Web:
http://www.armclub.org.uk/
The ARM Club will be fronting the club area at the top of the stairs, stand 386. For the first time, a number of local clubs will be represented including the Bottisham Acorn User Group and a number of others. Membership of and information about The ARM Club will be available and club members and non-members will have the opportunity to discuss technical problems and seek advice about Acorn related products.
We will also have our range of software products, including a package to solve some incompatability problems with StrongARM cards and possibly a new PD CD, following on from the success of the first which was launched at last year's show.

The Datafile

Stand 17
Willoughby House
89 Woodville Road
Boston
Lincs PE21 8BB
Tel/fax: (01205) 354203
E-mail: Sales@datafile.co.uk
Release of PDCD-4 which will contain the full version of *Merlin* with the option of a StrongARM upgrade for £30. The new *Copperplate* fonts package designed by Tony Nash plus our other fonts packages and CDs.

The Guardian Newspaper

Stand 112
119 Farringdon Road
London EC1R 3ER
Tel: 0171-278 2332
Fax: 0171-278 1449
The Guardian Newspapers Limited welcomes visitors and other exhibitors to view a number of products in its portfolio. On display will be *The Guardian Education* and *Online, The Guardian*'s weekly computer section.

There will also be a great opportunity to enter a competition to win £3000 worth of prizes from Xemplar.

Visitors to the stand are invited to take a complimentary copy of the days newspaper.

Uniqueway

Stand 56
3 Clarendon Road
Cyncoed
Cardiff CF3 7JD
Tel: (01222) 464020
Fax: (01222) 440071
E-mail:
sales@uniqueway.co.uk
Web: http://www.uniqueway.co.uk
Uniqueway will be showing the latest volume three of the *Risc Disc CD*, plus *Riscript-Pro*, the professional version of the PD Postscript viewer. There will also be the usual show offers on hardware and software.

Warm Silence Software

Stand 36
St Catherines College
Oxford OX1 3UJ
Tel: (0585) 487642
E-mail:
Robin.Watts@wss.co.uk
Web: http://www.wss.co.uk
Warm Silence Software will be showing new versions of all its products including *MovieFS*, *VRView*, *Larger*, *6502EM*, *Z80EM* and tapes and will be previewing forthcoming releases including new Floating Point Accelerator software.

Wyddfa Software

Stand 376
3 Preswylfa
Llanberis
Gwynedd LL55 4LF
Tel: (01286) 870101
Fax: (01286) 871722
Wyddfa Software, Caiti Software and The Lampeter University Education Project are demonstrating their new religious education software. Also on show are KS1 English and Maths programs that are particularly suitable for children with special needs. Bargain show prices.

Xemplar

Stand 84
The Quorum
Barnwell Road
Cambridge CB5 8RE
Tel: (01223) 724724
Fax: (01223) 724324
Web: http://www.xemplar.co.uk
Xemplar will be demonstrating a selection of the best in educational solutions running on Acorn computer platforms. Visit our stand to find out why schools come to us for the most appropriate and creative learning solutions.

For Secondary, we will be showcasing our Maths, English, Science, Geography and Design and Technology Toolboxes. For Primary, we will feature the Xemplar Junior Toolbox for RISC OS, the Reading Development Resource Pack and Curriculum Resource Packs. We will also be demonstrating Pocket Lab, Pocket Control, the Internet and Special Needs solution.

YITM

Stand 104
Television Centre
Leeds LS3 1JS
Tel: 0113-243 8283
Fax: 0113-243 4884
E-mail: yitminfo@yitm.co.uk
YITM, the leading publisher of educational CD-ROMs announces the launch of an exciting new disc – *Science Explorer*, which allows the user to experience the wonders of a virtual science exploratory. Visit stand 104 for your demonstration.

Zenta

Stand 130
10 Ravenhurst Drive
Birmingham
B43 7RS
Tel: 0121-358 3054
Fax: 0121-358 5969
E-mail:
Sales@zenta.demon.co.uk
Web:
WWW.ZENTA.demon.co.uk
Zenta will be extending our range of essential lowcost CD-ROMS, and making some special offers on the existing range. They will also be an opportunity for non-CD customers to purchase special low price fonts on floppy discs.

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Personal Accounts v3

Running your personal finances on a computer might seem like overkill, but until you try you will never know the benefits.

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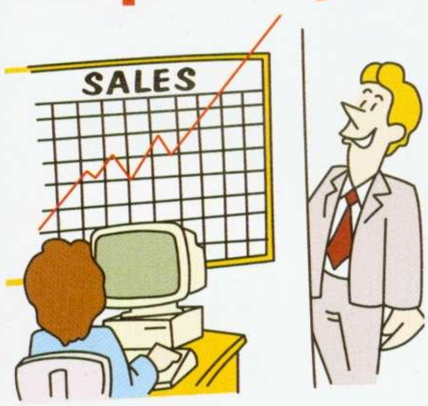
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"Far **faster and easier** than any other package... **an absolute dream** to use..." – Acorn User.

"**You'll wonder how you ever coped.**" – Archimedes World.



Prophet (Business Accounts) v2



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It is therefore no wonder it was awarded **Best Business Software** by Acorn User in 1995.

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StrongARM is here!

Mike Cook reveals the facts behind the power of the StrongARM chip

As you read this the first batch of StrongARM cards for the Risc PC will be winging their way across the country to Acorn Clan members. I spoke to Chris Cox and Dave Walker just two weeks before they expected the first ones to ship.

As the StrongARM processor prototypes are evaluated they continue to delight and surprise both Acorn and third party developers alike. When you use an application regularly you get to know how it reacts and expect delays when doing certain actions. It's when those expectations are not realised you get a surprise and a buzz.

For example one person at Acorn uses ProCAD for all the building work, floor plans and so on, it normally took about 20 seconds to download from the network and rendered on screen. So one day the development team slipped a StrongARM card in his machine without him knowing. The following morning, when he came to use it, the whole job was completed in less than a second, he was speechless. When he recovered he spent a good part of the day showing others how fast it was — a case of a faster processor not increasing productivity.

I suppose you could have predicted some sort of speed increase for that but no one expected formatting a floppy disc to be affected, in fact it's 15 to 20 per cent faster. Network access and Internet operations also show a speed increase.

So the big questions are, what makes the StrongARM so fast and just how fast is it? As you might expect there are many interdependent factors in play here, so many , in fact, that the full impact could not be evaluated before the prototypes arrived.

Perhaps the easiest to understand, initially at least, is the clock speed, at a nominal 200 MHz it is about three times faster than the fastest previous ARM chip. The exact clock speed is generated inside the chip and is expected to be 202.4 MHz.

Now that does not always produce a three times increase in overall speed because the computers main memory can't be accessed that fast, the chip has to slow down to do that. One way round this is to have a small section of memory on the processor chip itself.

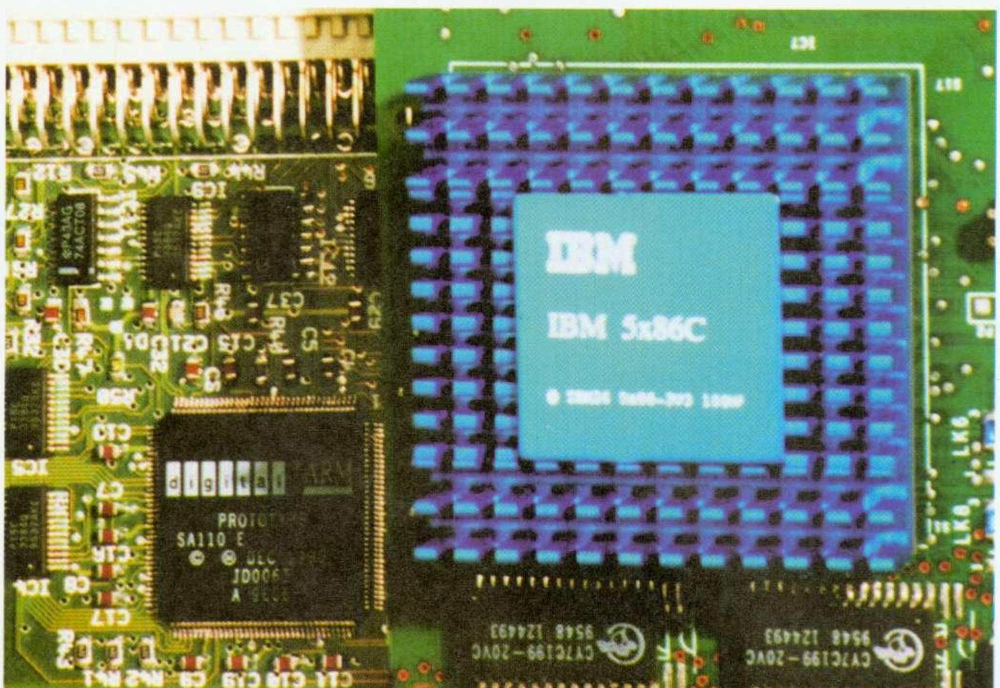
Any instructions fetched from the main memory are stored there so that if they are needed again the processor doesn't have to slow down to get them. This is known as Level 1 cache as it is actually inside the processor chip.

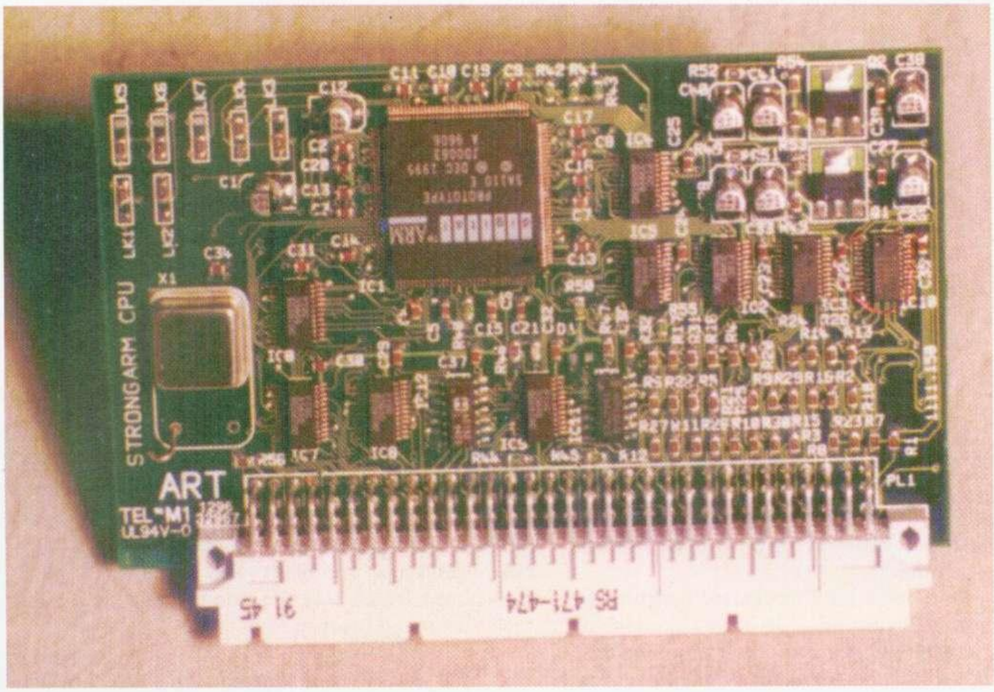
A Level 2 cache is fast memory that is added to the processor card, – it is not main memory but a buffer between the main memory and the processor. It would be too costly to have faster chips for all the machine's memory but a few K can improve things.

The current StrongARM card does not have a Level 2 cache and it's looking like speed improvements from it would only be marginal. However, Acorn are committed to producing at least an evaluation prototype of this type of card.

Now those of you that know the old ARM3 and ARM6 chips will know

The size of a 586 Pentium-type processor to the StrongARM — brute force versus elegance





The original StrongARM board

that they have Level 1 caches, so why does this bring about a speed improvement in the StrongARM? There are basically two reasons. First of all it's much bigger at 16K and secondly the processor architecture has been changed completely to a Harvard architecture. This means that there are two Level 1 caches inside the processor, one for the data and the other for instructions, each 16K. This arrangement is much more efficient at running programs, requiring much less access to the comparatively slow main memory and making the most of the fast clock speed.

Another speed boost comes from a new unified 5 stage pipeline structure, (see panel for details). This makes the act of executing a series of instructions much more efficient by, in effect, doing some operations in parallel. The ALU or Arithmetic Logic Unit has also been redesigned, and as a result some operations are faster.

It's the multiply instruction that benefits most taking just 1 to 3 cycles compared to 3 to 16 cycles before — these cycles are three times faster due to the clock speed. Perhaps the most exciting consequence to the ordinary programmer is that BASIC programs show the greatest speed up of all, from 10 to a staggering 20 times faster. This from a processor that on paper is only about five times as fast. Are you listening, Bill? At least 1000% faster!

The most exciting consequence is that BASIC programs show the greatest speed increase of all

The reason for this is quite interesting and owes it's origin to the early BBC Micro. The BASIC interpreter in the early machine had to fit into the memory of an 8-bit processor and so was very compact, about 16K. As this was adapted for the ARM chips, the increased width of the data bus meant it was *simpler* to write an interpreter.

So extra features were added and the size of the interpreter stayed at about the same size. Now it just so happens that the whole of the Basic interpreter fits into the cache of the StrongARM chip making the world's fastest BASIC interpreter, even faster! The greatest speed increases show up in program that perform large amounts of calculations, like satellite tracking or coordinate transforms used in 3D graphics.

Compiled C programs do not show as much improvement, typically 5 to 10 times. There has been some concern about the C compiler not working but release 5 does work, in fact they used it to create the new operating system.

Programs written in hand-tuned assembler can also show a huge speed increase. The record goes to a piece of code that didn't do anything useful but was specially written to highlight the new processor. That one clocked in with a 35 times speed increase, which is a

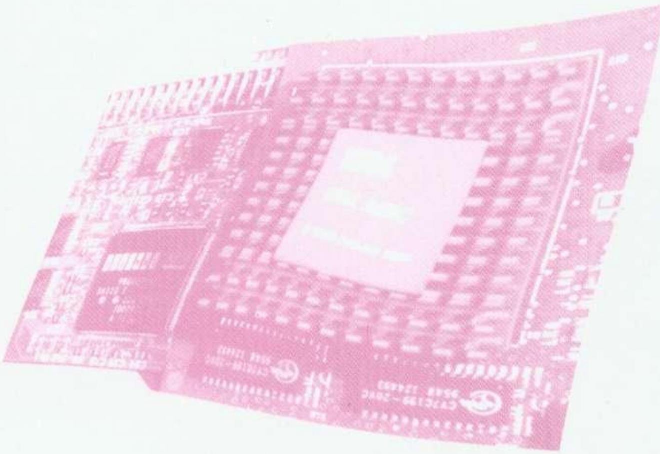
Pipeline structure

When a processor executes an instruction it goes through a number of stages. First it has to be fetched from memory, then decoded, that is, the correct arithmetic and logic elements must be activated. Depending on what the instruction does, various internal registers have to be loaded with numbers. Finally the results of the operation have to be placed somewhere.

Originally, in microprocessors, one instruction went through each stage before the next instruction cycle was started. Pipelining is the technique whereby when an instruction finishes one stage, that stage starts working on the next instruction so the overall throughput of instructions is faster. However, it does not always work so smoothly, for example, take the case of a branch. When the processor decides that a branch in the code should be taken, the instructions already in the pipeline are useless and need to be thrown away.

Therefore for a program to execute best in a pipeline branches should be avoided, but for a program to work best with a small cache you should have lots of tight loops, there's always a tradeoff. However, in general the more stages you have in your pipeline, the more efficiently you can execute your instructions.

The ARM processor has conditional operation on all of its instructions, this tends to reduce the need for short branches in code. Hence this sort of code benefits more from pipelineing.



good example of how to manipulate benchmarks.

One universally recognised benchmark is the Dhrystone, it is normally used to compare the raw processing power of different processors. In a recent test a 200MHz Pentium weighed in at an impressive 295K Dhrystones but as you might have guessed the StrongARM outperforms this with 355K Dhrystones.

The StrongARM was always going to have it's downside in terms of compatibility with existing software, but even that is looking a lot better than might have been feared. You see, while the processors instruction set is the same as the older chips there are subtle differences imposed by the change in architecture.

The first big restriction is that you can't write self-modifying code due to the data space and instruction space being separate in the Harvard architecture. An example of self-modifying code might be found in a graphics routine to draw a straight line. When you decided what way the line was going one trick was to store a bit pattern in the appropriate part of the program that would change an instruction from an increment to a decrement. In that way the program would either be much shorter or much quicker as you don't need to constantly test which way the line is going each time round the loop.

The StrongARM was always going to have it's downside in terms of compatibility with existing software, but even that is looking a lot better than might have been feared. You see, while the processors instruction set is the same as the older chips there are subtle differences imposed by the change in architecture.

Another favourite use for self-modifying code is in program protection where most of the instructions are stored on the disc in an encoded form and the program goes through the instruction putting them right before they are run. These tricks simply don't work with Harvard architecture.

However, a trick that will work, and is used in many applications, is a jump look-up table. That's where the program stores a byte in memory and later takes that as a jump address, it's a sort of computed GOTO routine. Most developers were initially worried that their programs would need a substantial rewrite but in most cases this proved not to be the case.

There is a growing, definitive list of the software that has been tested on the StrongARM compatability page at http://www.art.acorn.co.uk/HOTSTUFF/sacompat.html However, Acorn found that the kernel, the heart of the operating system, needed rewriting and so they used the opportunity to add in some extras to give us RISC OS 3.7, see the panel for details. Note that this operating system will still work with the older ARM processors and will be available as a general upgrade later.

Another downside to the StrongARM chip is that the whole board only consumes 1 watt of power, so unlike Pentium users you will have to find other ways of making your toast and coffee.

Where to next? Acorn plan to make a big show at this year's Acorn World, they simply want people to use it because it will sell itself. As a follow-up to the show Acorn have a road show that they will take round to major cities in this country, there are even plans to exhibit it at a large German computer show.

In the computer industry there are always exciting new capabilities round the corner but it is a very exciting time as you near the next corner. Acorn's machines are, once again, about to take their rightful place at the front with the fastest processor in town. AU

Pipeline problems

The 5 stage pipeline can also potentially cause a problem. When you store the program counter in memory you actually get the value plus 12 on the old processors, but on the StrongARM you get the value plus 8. Fortunately, when the destination is another register you get the same as the original processor.

One instruction that does cause problems is when you have the PC as the destination and one argument is a shift or rotate specified in a register. This requires the shift to be done in the preceeding instruction. Multiple register load and store instructions are also treated differently, they are simply unrolled by the processor into a sequence of single load and store operations, thus taking slightly longer than the old processor.

Installation

Installation of the StrongARM card is not quite as straightforward as just plugging in the card because the operating system ROMs need to be changed as well. This might prevent the more squeamish or ham-fisted from proceeding. Acorn are supplying an anti-static wrist strap just to be on the safe side.

The recommended procedure is to de-install any copy-protected applications back onto their original discs and make a copy of your boot files. Then the operating system ROMs should be changed and the new operating system installed. Only then with the new system running should the processor card be changed for the StrongARM.

Then reinstall your applications one at a time so you can spot any that cause trouble. Full and detailed instructions are supplied. Incidentally in addition to the floppy discs the new system is also supplied on CD-ROM. This contains lots of extras, like showoff demos, replay movies and the original Risc PC set of slide show images. For those of you who have been hanging onto them this will allow you to free up a bit more disc space.

Pssst...

Want a hot tip for Acorn World?
Acorn Centre of Technology, Alsystems, has done a deal with ART and secured a large quantity of those fast new **StrongARM** things. Buy one from them at Acorn World for £249 exc VAT and one of their engineers will fit it for you **FREE** while you visit the rest of the show! Call Alsystems now on **01420 561111** to reserve your StrongARM and don't forget to take your RiscPC to **Stand 68** on the day!

REVIEW

Midi maestro

Michael Cowgill presents a brief guide to MIDI

MIDI – to most people this means a particular style of integrated record deck, cassette, FM tuner and CD player. Say this to any contemporary keyboard player or other musician involved in the new music technology and they will think you mean something quite different.

How it all started

The end of World War 2 saw musicians experimenting, making music with electronic oscillators and also recorded sounds. By the 1970's a large number of synthesisers had been developed, most of which were monophonic. It therefore became common to link several synth modules together under the control of one keyboard, using a standard known as CV or Control Voltage.

Unfortunately, different manufacturers were using different variations of the standard and it became necessary for the whole industry to agree to a standard. Finally the Musical Instrument Digital Interface 1.0 communications protocol was unveiled to the industry at the Los Angeles Music Fair in 1983. Since then every professional standard keyboard, sequencer or sampler has sockets on the back marked "MIDI".

MIDI and RISC OS

"What's this got to do with RISC OS machines?" I can hear you say. Simple, by fitting your machine with a MIDI interface you can control the vast array of MIDI compatible gear ranging from keyboard gear through samplers and sequencers to lighting rigs and mixing desks.

Why use MIDI?

"But there's already an internal sound system", you reply. Yes, and it is a pretty good one, but it can't compete with the dedicated processors inside modern MIDI equipment. The arrival of the RiscPC and applications such as the PD *TiMIDIty*, the shareware *ReMIDI*, and ESP's software *Synth* enable users prepared to upgrade their systems sufficiently, to effectively use their machines as General Midi sound modules. Although the quality of sound is very much dependent on the sample set available, and the amount of RAM for storing the samples being used. It is a cheap way into MIDI compatibility for those unable to afford dedicated MIDI hardware.



Why not Tracker

Programs such as *Tracker* and *Digital Symphony* are too restricted in terms of the available sound channels. Compared with the 28 note polyphony of the Yamaha MU5 General MIDI module, or the 32 note polyphony of most other modern MIDI keyboards (128 and 64 note polyphony is available but not yet common), the 8 channels of *Digital Symphony* place severe restrictions on any chords you might want to play, and even with the 16 channels of *Desktop Tracker* you are struggling if you want to include strings and brass into your music as well as bass, guitar(s) and drums.

Setting the standard

Perhaps the most important reason of all for choosing to work with MIDI is that it is the Music Industry's standard format. A lot of nonsense is talked about industry standards, but it is of real use to know that a composition you have created in *Rhapsody* can be saved in MIDI format then loaded into *Sibelius*, or *Cubase* or *Notator*, or *Cakewalk Pro* and then played back. It isn't that the *Rhapsody* format is no good – each one of the music applications I have mentioned has its own format, but each one will also read and write in MIDI format because that is the one that all machines in the music industry can understand.

Jargon Box

MIDI	Musical Instrument Digital Interface
monophonic	Only able to play one note at once
polyphony	More than one note can be played at once
patch	Set of parameters which produce a particular sound
General MIDI	The latest MIDI standard which defines the instruments assigned to patch numbers
IC	Integrated Circuit – the blocks of silicon you see when you take the lid off your computer

Table 1: MIDI Status Bytes

Status Byte	Data Byte		
1st Byte Value	Function	2nd Byte	3rd Byte
80	Note off	Note Number	Note Velocity
90	Note on	"	"
A0	Polyphonic aftertouch	"	Aftertouch pressure
B0	Control change	Controller number	Control data
C0	Program change	Program #	NONE
D0	Channel aftertouch	Aftertouch pressure	
E0	Pitch Wheel	Pitch (LSB)	Pitch (MSB)
F0	System Exclusive	**	**

** Note: System Exclusive (data dump) 2nd byte= Vendor ID followed by more bytes and ending with EOX.

Under the skin

So how does it work then? A MIDI file is quite unlike a *Tracker* or *Digital Symphony* file. They contain digital images of the sounds together with the data for the order they should be played in. MIDI files consist of a series of instructions which are sent to the MIDI devices. Each instruction consists of a Status Byte followed by one or more Data Bytes. The Status Byte tells the device what action to take, and the Data Byte provides the parameters for that action. Table 1 gives information on the most commonly used Status Bytes. All numbers are in hexadecimal.

Implementation charts

The specific action taken by any one MIDI device is shown on the MIDI Implementation Chart which is supplied with all devices conforming to the MIDI standard. An example is shown in Table 2, without data, although some controller numbers are shown. The instrument's responses to the various MIDI messages are shown in the blank columns next to each one, first of all whether it transmits this MIDI message, and also whether it receives and understands this message.

The final column is for remarks giving further information about its response to the message. For example in the remarks column for the Control Change message you may find a list of the names of the controllers that the numbers in the first column refer to. Usually references to **Default** refer to the state of the machine when switched on. **Changed** or **Altered** refer to its state after a command has been issued to change this status.

RISCOS MIDI SWIs

Although there are others, everything you need for patch selection etc can be done with 2 SWIs:

- **MIDI_TxByte**
- **MIDI_RxByte**

Use MIDI_TxByte to transmit MIDI commands to your keyboard putting each byte in R0.

Use MIDI_RxByte to read MIDI info from your keyboard. Each byte will be held in R0

Exclusive!

You may have noticed in the table of Status Bytes that there is a command for transferring System Exclusive information. System Exclusive messages are one of the most powerful aspects of MIDI. It is System Exclusive messages which enable sequencers to have initial parameters set up from a MIDI file, or initialise the parameters required from a General MIDI module.

They are vitally important as they enable system specific events to be sent via a universal system. They can also be used for synthesiser patch creation and control from a computer.

All the information you will need to know should be found in the manual for your keyboard in the section on MIDI. Some keyboards do not allow you to

change the sounds, but even then, you can use the computer to make patch selection available at the press of a button.

Back to BASIC

A few lines of BASIC is all you need to implement most of the commands although there is nothing to stop you programming in C or ARM assembler if that is your favourite language. One word of warning. If you are writing patch editing software for older keyboards, it is possible to cause them to crash in such a way that only the manufacturer or a trained repair engineer can reset them. In some cases you can even blow ICs, so it is vital that you test the output from your program, before you start using it with your precious Juno or DX7.

You must also make sure that your program shuts down with an error if someone tries to use it with a keyboard it is not designed for. This is quite easy as the normal MIDI protocol is for the System Exclusive byte &F0 followed by a byte which represents the manufacturer's ID. Most manufacturers then follow this with one or more bytes which identify the model of keyboard. You can check for these and tell the program to abort if any of these bytes are not correct. I hope that the BASIC examples which follow will give you enough to help you start writing your own MIDI control programs. MIDI control is only limited by your imagination, you can even use it for networks. AU

Disclaimer

Michael Cowgill and *Acorn User* admit no responsibility for damage caused as a result of the use or misuse of information obtained from this article.

BASIC examples

All status bytes are in hexadecimal, all data bytes are in denary:

Play a middle C

```
SYS "MIDI_TxByte",&90
SYS "MIDI_TxByte",60
SYS "MIDI_TxByte",48
FOR delay=1 TO 10000
NEXT
SYS "MIDI_TxByte",&80
SYS "MIDI_TxByte",60
SYS "MIDI_TxByte",0
```

Select patch number 10

```
SYS "MIDI_TxByte",&C0
SYS "MIDI_TxByte",10
```

Set Master Volume (General MIDI)

```
b%=0
DATA &F0,&7F,&7F,4,1,0
DATA &40,&F7,&100
:
REPEAT
READ b%
IF b%<&100 THEN
SYS "MIDI_TxByte",b%
ENDIF
UNTIL b%=&100
```

Note: This last example although it uses System Exclusive information does not use an ID byte as it is a Universal Real Time message defined in the General MIDI specification. Do not try to use on a non-General MIDI device.

Table 2 - Midi Implementation Chart

Model				Date Version
Function		Transmitted	Recognised	Remarks
Basic Channel	Default Changed			
Mode	Default Messages Altered			
Note Number :	True Voice			
Velocity	Note ON Note OFF			
After Touch	Key Channel			
Pitch Bend				
Control Change	0,32 1 6,38 7 10 11 64 84 100,101 120 121			
Prog Change :	True #			
System Exclusive				
System Common	Song Pos Song Sel Tune			
System Real Time	Clock Commands			
Aux Messages	Local ON/OFF All notes OFF Active Sense Reset			
Notes				
	Mode 1 Mode 3	Omni On, Poly Omni Off, Poly	Mode 2 Omni Mono Mode 4 Omni Mono	0 Yes x No

Further info

Books – good starting points are:

Using MIDI
ISBN 0-88284-3540

The MIDI manual by David Miles Huber
ISBN 0-672-22757-6

Internet

The following web sites have relevant information or links:

- http://syy.oulu.fi/music.html
- http://www.leeds.ac.uk/music.html
- http://www.cs.ruu.nl/pub/MIDI/
- http://www.eeb.ele.tue.nl/midi/
- http://www-mitpress.mit.edu/Computer-Music-Journal/CMJ.html

The Score Machine

I am always willing to help people trying to get started in MIDI and can be contacted by the following means:

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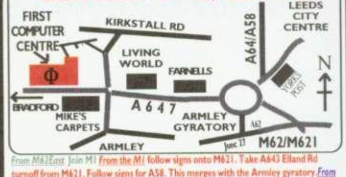
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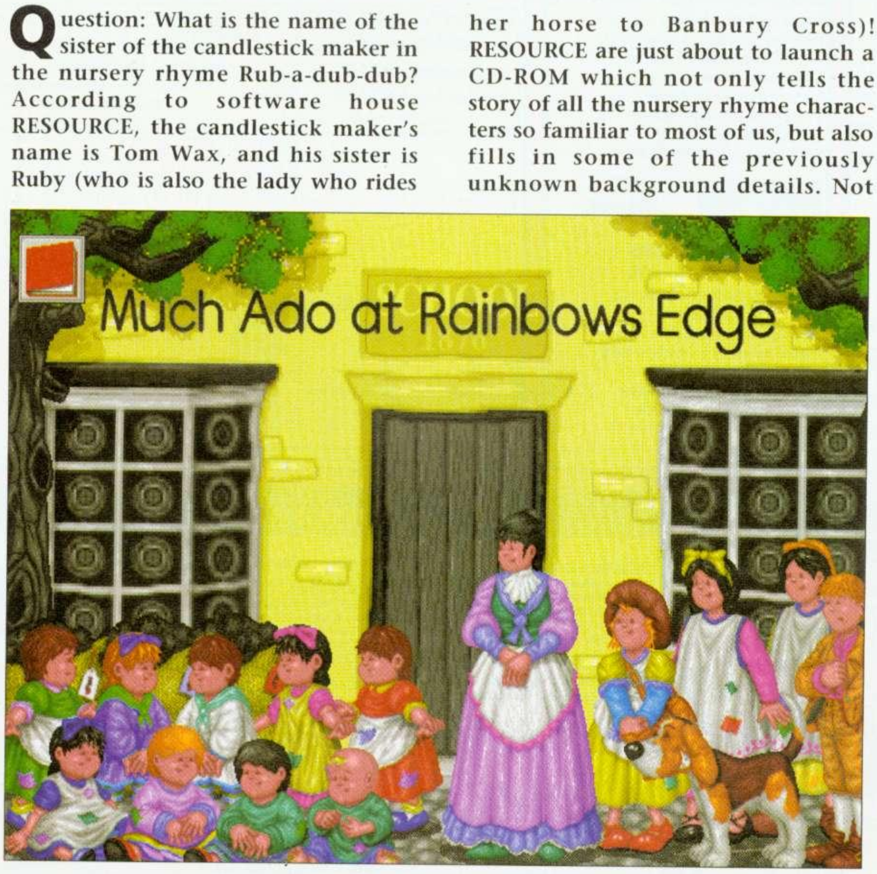
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Nursery Land revisited

Geoff Preston looks at a new software package which takes traditional nursery rhymes, links them together and turns them into a soap opera

Question: What is the name of the sister of the candlestick maker in the nursery rhyme Rub-a-dub-dub? According to software house RESOURCE, the candlestick maker's name is Tom Wax, and his sister is Ruby (who is also the lady who rides her horse to Banbury Cross)! RESOURCE are just about to launch a CD-ROM which not only tells the story of all the nursery rhyme characters so familiar to most of us, but also fills in some of the previously unknown background details. Not the official background, but a plausible (in most cases) background never the less.



Outside the School at Rainbow's Edge

To research this article, I chose to visit RESOURCE rather than to simply receive a trial copy of the software to use at home. What immediately struck me when I arrived at RESOURCE's premises in Kegworth, Leicestershire was the enthusiasm from the team. The writers, artists and programmers have spent untold hours on this project over the last two years, and yet they were still full of excitement when describing it. When my three children sat at the computer to have a go, they were watched very closely to see if there was any way of improving the software to make it easier to use. Such is their commitment to produce the very best possible program.

The initial idea

Conscious of the need to put something back into the community, RESOURCE MD Brian Stevenson approached a nearby children's hospice and suggested producing a CD-ROM

List of PSE topics covered in Much Ado at Rainbow's Edge

- Ambition
- Boasting
- Boredom
- Bravery
- Brotherly Love
- Bullying
- Caring for others
- Chattering
- Cleanliness
- Conceit
- Confusion
- Conscience
- Courage
- Cruelty
- Daring
- Deception
- Dependability
- Disability
- Dissatisfaction
- Domination
- Emergencies
- Encouragement
- Envy
- Esteem
- Fear
- Feelings
- Food chain
- Forgetfulness
- Forgiveness
- Frustration
- Gender issues
- Gossip
- Greed
- Growing older
- Guilt
- Hatred
- Helplessness
- Heroism
- Honesty
- Hunger
- Identity
- Inferiority
- Initiation
- Irresponsibility
- Justice
- Keeping calm
- Keeping up appearances
- Kindness to animals
- Laziness
- Loneliness
- Love (Romance)
- Love (Security)
- Loyalty
- Lying
- Madness
- Mischief
- Missing Out
- Mothering
- Name calling
- Predator and Prey
- Problems of parenting
- Relationships (teacher/child)
- Relationships (brother/sister)
- Revenge
- Routine
- Rudeness
- Searching for knowledge
- Self destruction
- Self image
- Selfishness
- Shame
- Showing off
- Snootiness
- Strangers
- Temptation
- The big wide world
- The Truth
- Theft
- Vegetarianism
- Worry

with the view that some of the profits could be channelled into the hospice to provide some sort of regular income for them. As the name of the hospice is The Rainbow, the town at the centre of the stories is called Rainbow's Edge. There will eventually be four CD-ROMs in the series, the first, *Much Ado at Rainbow's Edge*, will be followed by *Stories from Rainbow's Edge* by Christmas, with two further titles next year.



Inside the Classroom. Clicking on the map, the teacher, the desk or the cards will take the user to a story or activity.

Aimed at Key Stage 1-2, *Much Ado at Rainbow's Edge* is primarily designed to help develop reading, but it goes a lot further. It's difficult to know quite where to start reviewing this software because there is just so much of it, with no obvious beginning or end. The final release will just about fill a CD-ROM, and that is only after a considerable amount of pruning.

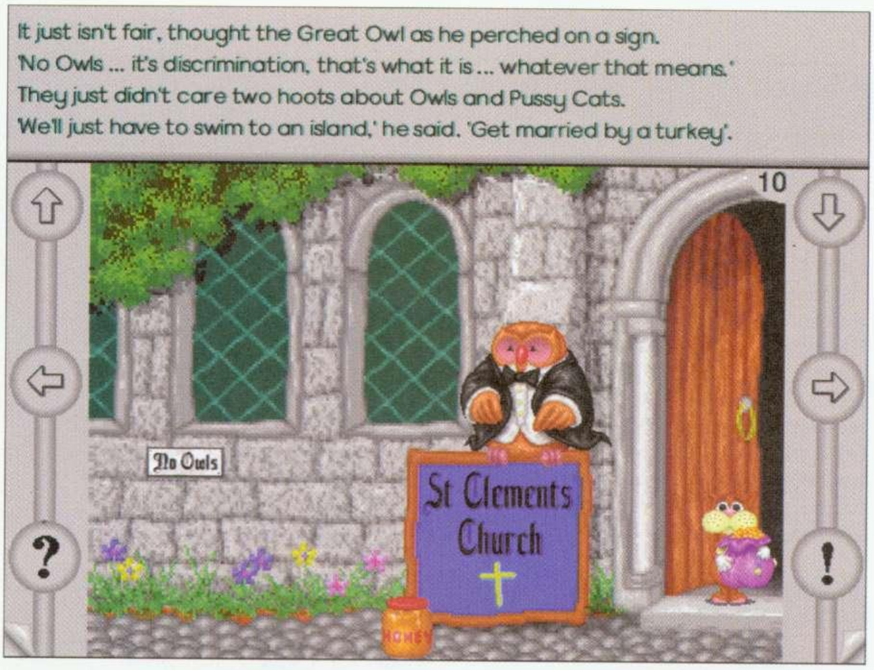
At one point programmer Paul Jackson calmly announced that the 650Mbyte CD-ROM wasn't really big enough, and they are eagerly awaiting the next generation mass storage device. The reason for the need for huge quantities of disc space is that apart from the extraordinarily high quality graphics including animations, there are over 55,000 words of digitally recorded text. The recordings are by professional actors and actresses who really bring the characters to life.

The software opens with a scene inside a classroom beautifully drawn in the style that seems almost synonymous with nursery rhymes. The art work by Tod is superb. Each image, a work of art in its own right, has been carefully hand drawn, then-scanned, re-touched, and anti-aliased to help remove the effects of the square pixels on the curves.

Most of the objects within the classroom can be selected to take the user to the various activities. Clicking on the map on the wall zooms in to show the town of Rainbow's Edge, dominated by the Castle, which houses Old King Cole together with his fiddlers three, as well as all the King's horses and all the King's men. In the village you'll find the High Street with the butchers, the bakers and the candlestick makers. Out in the countryside is the crooked man's crooked house as well as the three little pig's house under construction. The grand old Duke of York is busy marching his 10,000 men up and down the hill while in the woods Cock Robin's story unfolds.

All of the 120 characters and their families live in and around the village and moving the mouse pointer over the buildings shows who lives where. Clicking on a house will take the user to the story about the characters who lives there. The clever part here is that not only are the stories of the main characters included, but many stories have been created which links other members of the family to other nursery rhyme characters which have their own family. Tim Piper (the father of Tom as in Tom, Tom the Piper's son) is a kindly man who helps Mary rescue her lamb.

The nursery theme continues with countless interesting extensions to



The stories are not just re-hashed rhymes but are new stories on the original theme. Some of the writing is very clever and very funny.

some of the stories. One amusing tale is about how Humpty Dumpy actually came to fall off the wall and precisely why all the King's horses and all the King's men couldn't put Humpy together again.

A novel twist on the talking story idea is that unlike most other talking books, these stories are not necessarily linear. In other words, you don't have to start at the beginning and work through to the end. When another character appears in one of the scenes, the user can move the mouse pointer onto that character, select it and continue reading the story about that character. Later, while reading that story, another character may appear and that one can be selected so that that story may be followed.

All of the stories and characters are inter-linked in this way which greatly adds to the interest. Back in the classroom, clicking on the letters under the map offers the user one of eight activities. These range from questions about some of the events in the stories to Personal and Social Education activities.

To answer the questions one must first read the story and unless the story has been read, the relevant questions cannot be chosen. Teachers will be especially keen on the PSE activities, I'm sure. When chosen, a list of PSE topics is given, and clicking on a topic displays a list of stories which feature that topic. For example, if Bullying is chosen, the list of stories includes Georgie Porgie who, for those of us who recall, kissed the girls and made them cry.

Once again, back in the classroom, clicking on the teacher will display a pictorial database of all the characters in Rainbow's Edge. Clicking on a character will take the user to the appropriate story.

Whichever simple phrase is dreamt up to describe *Much Ado at Rainbow's Edge*, 'talking book' does not paint the full picture, although a large part of it can be used in this way. Apart from developing reading, associated activities include map work, databases, PSE topics and comprehension.

Also included on the disc will be several worksheets as Drawfiles which can be printed out, as and when they're required.

Cast list of Much Ado at Rainbow's Edge

Five Current Buns	Jane Asher
Three Blind Mice	Peter Meakin
Little Jack Horner	Ian McMillan
Peter & Paul (Two little Dickie Birds)	Judy Browne
Proper Little Duck (looking for water)	Nannette Newman
Humpty Dumpty	Alan Bennett
Ride a Cock Horse	Pete Meakin
The Witch & The Broom	Karen Ascoe
There was an old woman	Julian Bleach
The Owl & the Pussycat	Graham Langley
The Beanstalk	Brian Patten
The Little Cat	Julian Bleach
Georgie Porgie	Anthony Andrews
Tom Tom the Piper's son	Ben Elton
Olde King Cole	Anthony Andrews
I wrote a letter to my love	Maggie Buck
The Old lady who lived in a shoe	Melee Hutton
Little Miss Muffet	Melee Hutton

Cast List of Stories from Rainbow's Edge

Little Bo Peep	Anneka Rice
Goldilocks(Three Bears)	June Whitfield
Crooked man	Jimmy Nail
Jack & Jill	Gary Lineker
Dr Foster	Judy Browne
Ding Dong Bell	Isla StClair
Rub a Dub Dub (Three Men in a Tub)	Mike Harding
Bobby Shaftoe	Victoria Wood
Billy Goats Gruff	Karen Ascoe
5 little Ducks	Nannette Newman
Farmer in his Dell	Derek West
12345 (once I caught a fish alive)	Rusty Lee
I Had a Little Nut Tree	Graham Langley
Mary Had a Little Lamb	Roddy Stuart
Sing a Song of Sixpence	Wendy Cope
Old Mother Hubbard	Julie Walters

Talking books

Unlike *Much Ado at Rainbow's Edge*, the second CD-ROM in the series, *Stories from Rainbow's Edge*, is a collection of talking books based on the original rhymes featured in the first CD-ROM. The texts for the stories, however, are not the original rhymes regurgitated for this program, but have been re-written and slightly expanded upon, although still following the original storyline quite closely.

The program opens with a scene in the library. The user moves to one of the thirty or so books on the bookshelf and having chosen the story, the user can either read it from the screen or have it read to them by the computer. The voices used to tell the stories are almost all of famous personalities who have given their time in the knowledge that some of the profits will go to the Rainbow Hospice.

Celebrities include Gary Lineker and Anthony Andrews, (both of whom are patrons of the Rainbow Children's Hospice), Jimmy Nail, Victoria Wood, Anneka Rice and Mike Harding to name but a few. Each of the readers have been perfectly matched to the story so that their regional accent enhances the text. Irish actor Derek West is wonderfully over the top as he reads the story of 'The Farmer in his Dell'. Animations add to the interest as well as to the humour which varies between subtle and groan-inducing.

In use

The software features switch control as well as keyboard control so that it can be used by most people regardless of age or physical impairment. I've said this before, but I think it's worth another airing. Although this is aimed primarily at school, parents will doubtless buy it for their children to use at home. To get the very best from this material, I feel very strongly that the parents should sit down with their children to work through the software. It is wholly inappropriate to buy material like this and give it to your child to keep them quiet while you pursue some other activity. You'll both get so much more from it going through it together.

Conclusion

It's hard to criticise this software. Even the unfinished pre-release version I saw is so polished. The graphics are as good as any I've seen and the whole presentation has clearly been very carefully thought out. The digitised speech is crystal clear and read with real feeling. The storyline is varied and will not only appeal to youngsters, I'm sure parents will equally enjoy the 'off-the-wall' explanations of the some of the events.

The reading content goes well into Key Stage 2, which is intended to be up to 10 to 11 years of age. My only concern (and this is not a criticism) is the suitability of the nursery rhyme characters for children of this age.

My seven year old twins are just about past nursery rhymes. Simon in particular was not over-keen to spend too much time with the program, even though his reading would certainly have improved quite considerably by the sustained use of this material. Sally, on the other hand, was motivated by the characters and continues to gain a great deal from the program. Younger children, I feel, will be more comfortable with the material and indeed there are some exercises aimed at Key Stage 1 and pre-school. Once at that difficult age where street credibility becomes increasingly important, this software, sadly, is likely to have less appeal.

Of all the CDROMs I've reviewed, this rates as one of the best both in terms of original concept as well as the way the project has been executed. The question is not 'Will it win an award?', but 'How many awards will it win?'.

The Rainbow Hospice

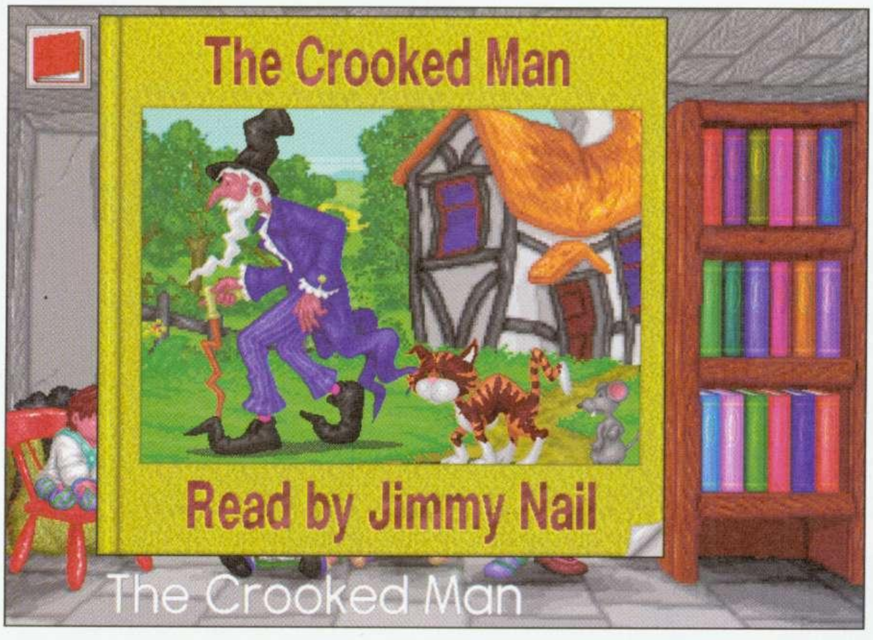
The Rainbow Hospice receives patients up to the age of 18 years. It is a self-run organisation which receives no funding whatsoever but relies solely on voluntary contributions. The value of the work they do for terminally ill children cannot be measured. If you would like to make a contribution please send it to Vanessa Cox, The Rainbow Children's Hospice, The Cope Children's Trust, COPE House, 6 Tower Street, Leicester LE1 6WS.

The cost

Much Ado at Rainbow's Edge will cost £49.95 plus VAT whilst *Stories from Rainbow's Edge* will be £39.95 plus VAT, with a percentage of sales going to the Rainbow Hospice. In addition to the main products, there is to be a resource pack of photocopiable worksheets and a disc of high quality Drawfiles of all of the characters featured in the stories. The worksheets will be similar to those on the CD-ROM, but are being offered in this format primarily for people who do not have access to high quality printing. The cost of the resource pack has yet to be finalised but is likely to be about £12, with a similar percentage of the profits going to the Rainbow Hospice.

By the way, the reason Humpty couldn't be put back together again was..... No, you'll have to buy it to find out. AU

The talking books in Stories from Rainbow's Edge are read by some very well know personatities brilliantly matched to the character. One might even say, type-cast. (No offence Jimmy.)



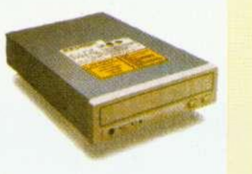
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8Mb 72 Pin Simm	£35.00	£41.12	c
16Mb 72 Pin Simm	£65.00	£76.37	c
32Mb 72 Pin Simm	£125.00	£146.87	c
540Mb IDE Hard Drive	£125.00	£146.87	d
850Mb IDE Hard Drive	£135.00	£158.62	d
1Gb IDE Hard Drive	£149.00	£175.07	d
1.2Gb IDE Hard Drive	£165.00	£193.87	d
1.6Gb IDE Hard Drive	£185.00	£217.37	e
2Gb IDE Hard Drive	£215.00	£252.62	e
540Mb SCSI Hard Drive	£135.00	£158.63	d
1Gb SCSI Hard Drive	£189.00	£222.07	e
2Gb SCSI Hard Drive	£345.00	£405.37	f
4Gb SCSI Hard Drive	£680.00	£799.00	f
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28.8k Ext. Fax/Modem	£115.00	£135.12	e
14.4k Fax/Modem BABT	£99.00	£116.33	e
28.8k Fax/Modem BABT	£125.00	£146.87	e
Keyboard Ext. Cable 2M	£6.50	£7.64	b
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Acorn Mouse	£20.00	£23.50	b
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28.8k External Modem	£115.00	£135.12	e
14.4k Fax/Modem BABT	£99.00	£116.33	e
28.8k Fax/Modem BABT	£125.00	£146.87	e
Ethernet Card	£110.00	£129.25	c
Ethernet Card & Access+	£122.00	£143.35	c
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Acorn Mouse	£20.00	£23.50	b
Mouse Extension Cable	£6.50	£7.64	b
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Ethernet Card	£110.00	£129.25	c
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		£9.99	b
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Risc OS 3.1 Full Kit	£50.00	£58.75	e
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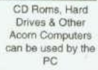
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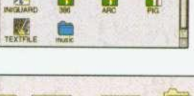
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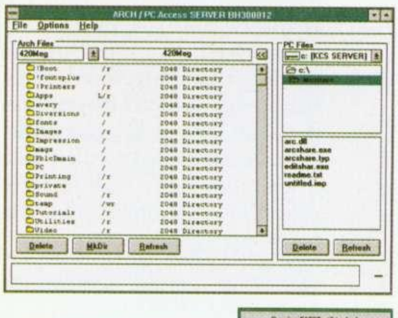
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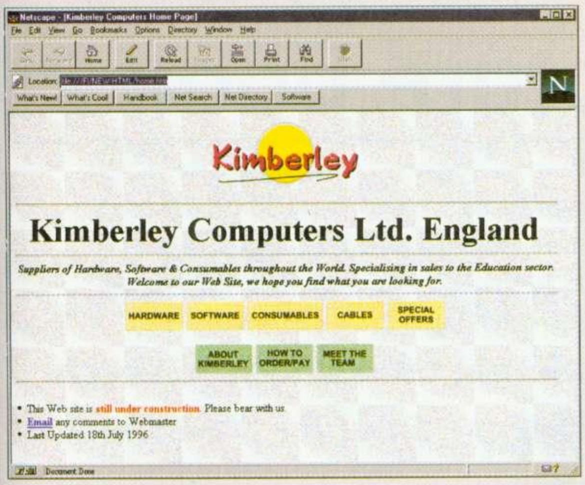


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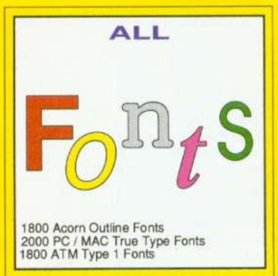
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4 Comp. - Mon/5 Pin Keyb	£15.75	£18.51 b
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4 - 1 Serial Switch 25 Pin	£15.75	£18.51 b
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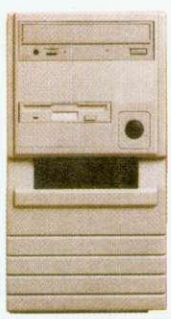
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Making movies

Leo Telling looks at Videodesk and the future of desktop video

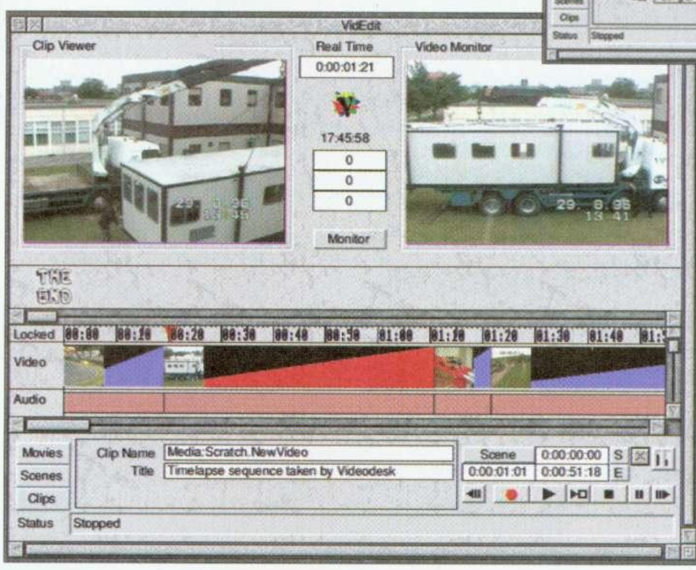
I've seen the future of desktop video and it works... well nearly. *Videodesk*, the long awaited video digitiser/compressor/editor package from Irlam Instruments is nearing completion, and a fully working, although not fully featured, version should be on display at Acorn World.

Solid base

Jim Irlam and his team have rather sensibly opted to build up the features in *Videodesk* from a solid base, rather than show something that does everything but has more crashes than the M25 in the fog. By the time Acorn World comes round *Videodesk* should be offering full drag and drop video editing at a quality previously unseen in the Acorn market.

Consisting of three basic ingredients *Videodesk* is much more than the sum of its parts. The card itself is the heart of the system, a professional quality video digitiser and compressor which uses Irlam's own moving JPEG compressor engine.

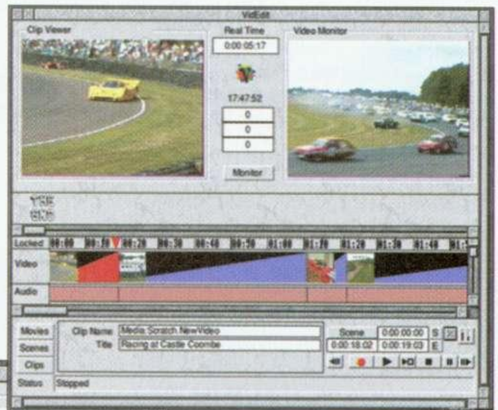
The Risc TV overlay card backs up the digitising side by allowing moving video to be mapped directly on to the screen, without sacrificing any precious processor bandwidth. Finally, the editing software ties the bundle of goodies together by presenting a powerful, yet simple to use, editor with the now standard time-line style interface.



Something special?

But why care about *Videodesk* when *Eidoscope* and *CineWorks* do pretty much everything? Well, when you see what it can do you may well shed a few real tears as you throw your old video editing kit in the bin.

Videodesk not only promises to deliver real non-linear editing at better than VHS quality, it actually does it. And the cost of this mini-marvel? Less than the cost of two edit spec VHS machines, but a little more than a decent camcorder – the final price is likely to be around £1,200. However, when used with a conventional camcorder (Hi8, Video 8, VHS, or even one of the new digital formats) it will most likely be the camcorder that limits the quality of your work – not *Videodesk*.



What can it do?

Videodesk can record and compress, full frame, 24-bit video direct to disc in real time. Not the tiny 160 by 128 pixels of a standard replay file, but monstrous 768 by 576 pictures. When played back through a second external monitor (a domestic TV will do) the resulting pictures are stunning.

Add to that the facility to make audio and video edits, fiddle with the sound, add captions and video effects, and I can only conclude that affordable desk top video has finally arrived. *Videodesk* might not be in the price range of the casual dabbler, but anyone who takes home movies seriously, or has an interest in the world of professional video will be more than interested.

Speed and image quality

The pre-release version I saw was pretty solid, and although it didn't offer all the bells and whistles of *Eidoscope* or *CineWorks* it blew both of them away as far as speed and image quality are concerned. By using its proprietary moving JPEG compression codec and a special overlay card Irlam has bypassed the bottleneck of the Risc PC bus, allowing full screen compression and playback – without the aid of a StrongARM.

In order to demonstrate the power of *Videodesk*, Irlam is currently producing a short video which, as well as showing off the features of both hardware and software, has also being completely produced using *Videodesk*.

Again it is hoped this will be ready in time for Acorn World. Irlam seems committed to developing the project to compete with the big players in the game, and at this stage the signs are that Acorn is also betting on the system becoming a winner. Watch this space... AU

Contact details

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UB8 3PH
Tel/fax: (01895) 811401
E-mail: info@irlam.co.uk

Colourful pages

Extensions to standard HTML are discussed in this issue's HTML tutorial by David Matthewman

So far, most of the HTML I've described has been standard, normal HTML. It will work on all browsers, you need to have a good grounding in it to write HTML, but it's unlikely to win you any awards for artistic merit. It gives you very little control over how your HTML will look – decisions of that sort are all taken by the browser, and you trust it to make sensible choices.

There's absolutely nothing wrong with HTML of this sort, and there are thousands of commonly-read pages on the Web that use it. But, if you want to, there are plenty of ways to change how your HTML appears. They're not standard, and they won't work on all browsers, but usually the worst that happens is that they're ignored by older browsers. Therefore, provided that you don't rely completely on them, there's no harm in using them.

Alignment

In standard HTML, paragraphs, headings and so on aren't tied to any particular alignment. Paragraphs are usually aligned left, with some headings being aligned centrally. However, you can add an **align** attribute to paragraph and heading tags which on many browsers will change the alignment. They can be aligned "left", "center"(sic) or "right" – note that all HTML is spelt the American way.

Older versions of *Netscape Navigator* (a non-Acorn browser) didn't support this, but invented a **<center></center>** tag pair to perform the same job – most browsers support this as well, but it's generally better style to write:

```
<p align="center"> … </p>
```

than:

```
<center><p> … </p></center>
```

The corresponding **<right></right>** tag pair exists, but is rarer. The use of **align="left"** and **align="right"** with the <img> tag is subtly different. With images, the image is aligned either to the left or the right of the screen, and text flowed round it – rather as it would be in a frame in a DTP package.

Unfortunately, none of the current Acorn browsers supports this attractive effect, although the next release of the *ANT Internet Suite* will.

Colours in HTML

When specifying a colour in HTML, it is given as a three-byte hex number "#rrggbb", where rr is the red intensity, gg the green and bb the blue. This means that #000000 is black, #ffffff white, #ff0000 red, #ff9900 orange and so on (the colours aren't case-sensitive). The individual bytes can take any value, so that in theory you can specify the full 24-bit range, although in practice the display will be limited by whatever screen mode you are in, with a judicious allowance for dithering on some browsers.

The hash sign '#' in front of the number is compulsory, and it is safer to enclose them within double quotes. Colours on RISC OS are commonly specified as three-byte numbers, so this system should be reasonably easy to learn, provided that you know your hexadecimal. There is a move to have 16 standard 'named' colours in HTML, but until more browsers support them it's probably not a good idea to use them. In any case, the proposed colours are based on the Windows standard palette colours, so they should probably be boycotted on principle.

So, now you know *how* to specify colours in HTML, the next question is *where*. The most common place that colours are used in HTML is in the **<body>** tag, to set the background and text colours. Before discussing this, I need to mention another use of the **<body>** tag – to set a background image.

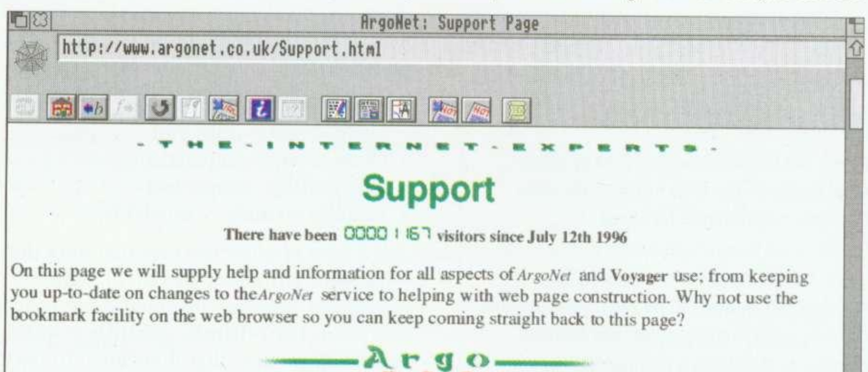
Body tagging

In standard HTML, the **<body></body>** tag pair marks off the HTML to be displayed, and has no other function. However, most browsers now allow you to specify a background image for the page in the tag by using the **background** attribute. If you write:

```
<body background="image.gif">
```

then the file *image.gif* will be used as the background to the page. If the file is smaller than the page (it usually is) then it is tiled to fit – there is no option in HTML to scale or centre it as there is with tiles on the Desktop.

Obviously, if you use a dark image, your text may not show up very well against it if it is rendered in the default black. For this reason, if you use a background image, you should always set the five other attributes that set the text colour as follows:



The ArgoNet site makes good use of colour and central alignment of text and images

FEATURE

- **text="#rrggbb"** – text foreground colour.
- **bgcolor="#rrggbb"** – background colour, and the colour that the text will anti-alias to, if you're lucky enough to be browsing using RISC OS. Again, notice the American spelling – it won't work if you write 'bgcolour'.
- **link="#rrggbb"** – link colour, the colour text in an anchor tag will appear (see August for anchor tags).
- **vlink="#rrggbb"** – visited link colour, the colour that a link will be if it's a link to a page that you've already visited.
- **alink="#rrggbb"** – 'active' link colour. A link may flash this colour when clicked upon, although a few browsers also consider links to named tokens within the same page to be 'active'.

The reason that you should set all of these is that it is perfectly possible for someone's browser to be configured by default to show white text on a black background, or indeed any combination of colours that the person using the browser happens to like.

If you impose a background image on them, then you should also suggest a combination of colours that goes well with that image. I came across one page where the background was a blue fractal pattern, but where the designer had forgotten to change the link colour, so that on most default browser settings the links were invisible. Not helpful.

The font tag

As well as setting colours globally, you can set them locally with the **** tag pair. This non-standard tag takes a number of possible attributes, one of which is **color**, specified in the same way as above. Therefore:

```
This is some <font color="#0000ff">
blue</font> text
```

will colour the word 'blue' blue (at least on browsers that understand this tag).

The **<font>** tag can do more than change colour – it can also be used to change the size of the display font as well. This uses the **size** attribute to specify either a particular font size, or a change in size from the current font. Therefore, you can have either:

```
<font size=6>This is some large
text</font>
```

or

```
<font size=+2>This is two sizes
larger than before</font>
```

Font sizes are in arbitrary units on a scale of one to seven – it's up to the browser to map these to actual point sizes. The base font size on most browsers is three, so one and two are smaller fonts than normal, and four to seven are larger than normal.

I have rarely, if ever, seen changes in font size used well. After all, it's not a very common practice in standard typography for a good reason – it tends to look messy. If you decide your pages lack the extreme avant-garde look then by all means use it, but you didn't hear it from me, OK?

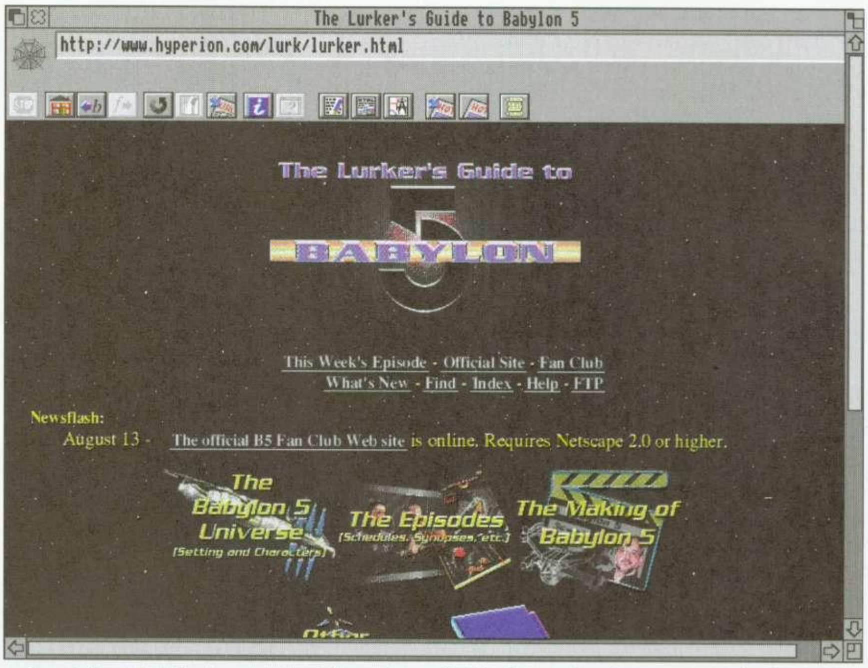
Other tags

There are a few other tags and extensions to tags in reasonably common usage that extend the HTML standard. Last issue I introduced the bold and italic tags – there are also:

- **<u></u>** – underlined text
- **** – subscript
- **** – superscript
- **<big></big>** – larger text
- **<small></small>** – smaller text

and a host of other less common ones that I haven't got room to list ,.. with one exception. Netscape invented a tag called the blink tag (**<blink></blink>**) which caused all the text that it enclosed to flash on and off. This was so irritating that even Netscape relented eventually and now disapproves of the tag (besides, it's now invented the animated GIF which is the blink tag with orders of magnitude more potential for annoying people). Never use the blink tag; you'll get flamed. By me, for a start.

Next issue I'll be taking a short break while Stuart Halliday of the Cybervillage decribes how to get the best from your images. AU



A gratuitous Babylon 5 screenshot, illustrating a tiled background and very non-standard colouring

Setting the standards

When I write of 'standard' HTML, I am in fact referring to the HTML 2.0 standard published by the World Wide Web Consortium (W3C) in late 1994. This is a convenient reference point, as most browsers support at least this standard (even text-only browsers support it as best they can). We've covered most of the HTML 2.0 standard in the issues before this one; only forms and some of the header tags have been left out.

There have been many extensions to this standard, with new tags being added by a number of parties. The most significant (and most of the ones mentioned in this issue) were added by Netscape Communications Corporation for its browser *Navigator*. Since *Netscape Navigator* has been for some time the most popular browser on the Web, it has driven the standards before it to an extent. Most pages on the Web incorporate some tags that originated at Netscape.

W3C tried to establish a new standard for HTML 3.0, but overreached itself. The new standard was judged to be too ambitious and, crucially, wasn't compatible with existing practice on the Web. A number of elements from that standard have found their way into browsers from both Netscape and Microsoft (and, soon, ANT Ltd), and a new standard has recently been published by W3C incorporating many of the best of them. This standard is termed HTML 3.2, and is already supported to varying extents by Acorn browsers.

To find out more about standards on the Web, visit the W3C web site at: http://www.w3.org/

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(Dealer fitting recommended for the ARM3)

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A5000

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VISA

A meeting of the minds

During the last couple of years, two companies in particular have been responsible for producing some excellent datafiles for most areas of the curriculum. Between them, Anglia and Longman have a huge catalogue of datafiles, many of which contain so much support material that they could be regarded as 'off-the-shelf' teaching modules. The problem is that if you want to use them, you need to use the appropriate proprietary database program.

Unless you have enough capitation to buy both, whichever database program you choose will deny access to the datafiles of the other. (Longman's *Pinpoint* files won't run with Anglia's *KeyPlus* and vice versa). If, like me, you use another database you won't have access to any of the datafiles which really is a shame. (Unless you can afford all three in which case that really will confuse everyone.)

Call me biased, but for me, Iota's *Datapower* is *the* database for Acorn computers. Apparently, (and I didn't know this until recently) *KeyPlus* files have limited compatibility with *Datapower* in so far as *Datapower* will read the text from a *KeyPlus* datafile and create a *Datapower* datafile. There will be no graphics and the layout will be rather basic, but it does work.

Anglia have been talking to Iota and have created improved compatibility between *Datapower* and *KeyPlus* files so that graphics will be imported. In addition to the developments made to *Datapower* itself, Iota and Anglia are working together to ensure that files load into *Datapower's* display appropriately. Anglia will gradually be upgrading their datafiles to include a layout module which *Datapower* will automatically recognise.

Even without automatic layout, this I believe, is a very significant advance in data compatibility. Are you listening, Longman?

Anglia: (01603) 615151.
Iota: (01223) 566789.
Longman: (01223) 425558.

Aerial photos

Geography departments will be interested in some new products and a new service from Photoair (who produce the CD-ROM *London from the Air* – reviewed January 1996). PhotoAir now have collections of aerial photographs taken along UK rivers. Most rivers in the UK are covered and each pack contains 10 high quality digitised aerial photographs taken along the river's length.

The 10 pictures include the source and mouth and eight shots along the river showing important features such as islands, meanders etc. An accompanying text file gives location and map reference. Select two UK rivers for £40 the pair.

PhotoAir will also provide aerial photos of your school site and the surrounding area. The *School Locality Pack*, as it's known, costs £64.50 for three photos: the school campus and two nearby locations. (There is heavy emphasis on the word 'nearby' – Dorset schools, for example, may not choose a site in the Midlands)

Although this may seem a little pricey, it costs real money to fly an aeroplane and most of the price is for this. Once the pictures have been taken, you can choose from A4 colour prints, and/or have the pictures digitised. The cost of digitised pictures includes an unlimited site licence plus the right to use the image in a school brochure and place it on the Internet.

PhotoAir: (01733) 241850 or fax (01733) 242964.



Islands and bridge at Henley-on-Thames. SU760830

No Hodge Podge for Acorn

"Visit '*Hodge Podge House*' with Sherston as they go online with AOL the world's largest and fastest growing Internet provider", says the press release. It continues, "Sherston is launching *Hodge Podge House*, a new interactive experience to be found within the AOL's Kids section. This unique area is full of fun and meaningful activities for children between the age of 5 and 13 years."

Looks good doesn't it. Unfortunately if you use an Acorn computer, you can't access this software. At the time of writing, there are no plans to produce an Acorn compatible version. It's a great shame that Sherston, a company synonymous with Acorn software are involved in a venture that excludes Acorn users. Perhaps someone might reconsider.

Touching a raw nerve

After my comments about the Lindis Touch Screen in the September issue, Resource felt that I had implied Lindis had made a major technological breakthrough in producing a touch screen which is compatible with all existing software. They pointed out that their Touch Windows has been around for some time, as has another by SEMERC, both of which may be regarded as alternatives to the existing mouse.

Contacting me

You can contact the Education page by writing to me, Geoff Preston at Acorn User, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to: aueduc@idg.co.uk

REVIEW

Finding your way

Continuing from last month's introduction to GPS, Geoff Preston takes a more detailed look at two solutions for touring the country

To make use of the Global Positioning System, you need a GPS receiver. Handheld, self-contained GPS receivers are about the size of a mobile phone having a small keypad and a LCD screen to show your location. Many, but not all, have a port into which can be connected a computer – presumably a portable computer – where the data can be processed further. However, connecting a Pocket Book to one of these seems like a duplication of hardware (you'll have two screens and two keyboards where only one of each is required).

The hardware

Positioning International Ltd can supply a GPS receiver which has no keyboard or screen, just a cable with a plug on the end. Manufactured by Garmin, it connects either into a specially designed cradle which fits into a car or boat and powered from the cigarette lighter, or directly into the Pocket Book via the A-Link.

The cradle is a very cleverly designed product which securely holds the Pocket Book and automatically taps into the serial port and external power socket. The cradle comes with a variety of hardware in the form of brackets and screws and is designed to be fixed to a suitable place in the car. However, as I had to return the unit to Positioning, I chose to fix it to the dashboard with copious quantities of blu-tack.

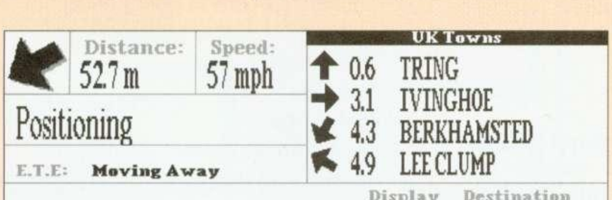
The software: *FindIt*

FindIt is available on either SSD or floppy disc. If purchasing the floppy disc version, you'll probably need to buy a fairly meaty SSD to hold all the files and the main programs, but if you have a serial link and can run *Windows*, this is by far the best option. Transferring from disc to Pocket Book has been made as simple as it's possible to be and you have the option of transferring the files and programs to any combination of main memory, drive A or drive B.

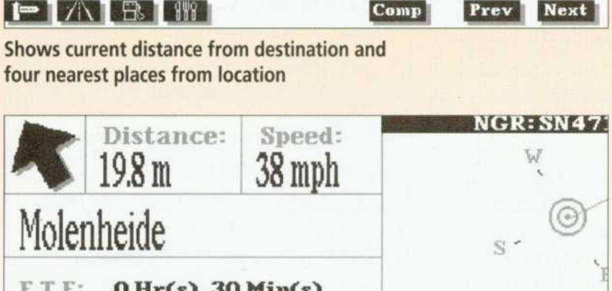
Once installed, the program is launched in the usual way, by highlighting the icon and pressing enter. If a GPS receiver is not present or there is a weak signal, the software offers a test mode or demo mode. The manual suggests trying the software without the GPS receiver connected so that you may become familiar with the software.

This, I discovered, is a very good idea as the program includes an enormous number of keyboard short cuts to access the different modes, including a real time compass.





Shows current distance from destination and four nearest places from location

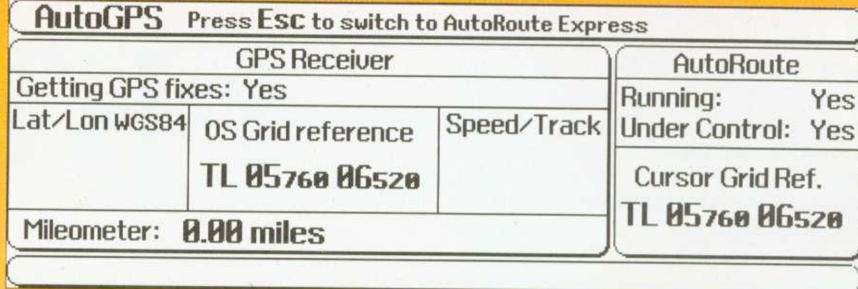


Useful in Europe, FindIt shows you the way back and displays a compass

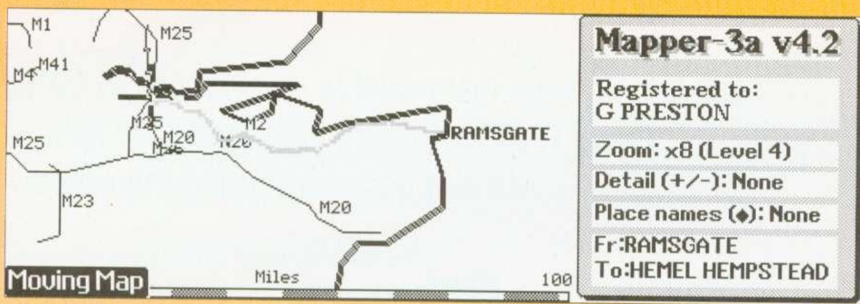
FindIt in use

FindIt is supplied with databases of UK place names, road junctions, fast food outlets and petrol stations. The program, therefore, is most suitable for use in the UK. When you start a journey, enter your destination and *FindIt* will more or less take you there. The display is clear and simple and provides up-to-date info which you can glance at from time to time. If used in this way, you just use the display; it shouldn't cause any problems. Don't attempt to use the computer (such as entering place names into the database) while on the move.

As you're driving, the direction arrow constantly changes direction, as do the arrows for the four nearest places, road junctions, fast food outlets or petrol stations, depending on which database you're currently accessing. Along with this information is the estimated journey time remaining and the current speed. The journey time is not very reliable for several reasons, not least of which is the fact that the distance is calculated 'as the crow flies' and consequently less than the actual road distance. I also found the speed was consistently 5 to 7 per cent below the actual road speed which is way outside the



Adds a moving map display to AutoRoute Express



Plotting the path (in grey)

expected inaccuracy from the car's standard speedometer.

Although *FindIt* (or rather the data currently distributed with it) is intended for use in the UK, there is one feature which makes this package suitable for use on the continent. *FindIt* can offer the opportunity to enter the name of the current location and will automatically take the current NGR and add both items to the current database. (NGR is the National Grid Reference which takes the form of XXEEENNN eg TQ175302 which is Horsham.)

Developing that idea, you can enter points along the route and compile a log of the journey which will enable *FindIt* to provide a more accurate route for the return journey. While on holiday in Europe, I entered the name of the camp at which I was staying, and while touring, entered strategic points along the way which enabled me to tour the country at leisure and use *FindIt* to get me back to the camp.

Alternative software: *Mapper3a*

Once you have a GPS receiver, you can use the latest version of *Mapper3a* to decode the information. *Mapper3a* can be downloaded from Steve Litchfield's 3Lib PD and Shareware library. Remarkably, it is shareware and will cost £14 to register. Apart from the ethical point of view, registering does unlock several features of the software making it slightly more friendly or usable in certain areas.

Mapper has been covered in *Acorn User* before. It's a very powerful geographical information system which has the ability to use GPS data, provided a suitable GPS receiver is connected. I used the same receiver with *Mapper* as was supplied with *FindIt* and in general, it worked very well.

There were a couple of slight glitches, however. The first is that it seems to need a much stronger GPS signal than *FindIt*. The second hiccough was when returning home – the system stopped working while travelling on the M25. Perhaps that says more for the road than the software, but it meant the moving map display had to be 're-engaged' which was not a problem other than it lost the trace. (One of the few options available in the moving map display is the facility to leave a trail showing where you've been.)

Other software

AutoGPS adds a moving map to Psion's *AutoRoute Express*. If you've got *AutoRoute*, this is a worthwhile extension, even if you don't have a GPS receiver as, among other things, it displays the cursor position grid reference on the *AutoRoute* screen. *AutoGPS* is available from 3Lib.

Conclusion

If you get a buzz from people gathering around your car with their mouths open, and then having to answer lots of questions about a gadget they've probably never heard of, let alone seen, this is probably the best piece of kit around.

If you do a lot of touring, *FindIt* is probably a worthwhile investment, although it will be a better proposition with European data. However, if European data was provided to the same detail as UK data, you'll need a really large SSD or split the data into countries. Unlike *FindIt*, *Mapper3a* really only works on UK mainland as the only GPS data output is the moving map, and at present that is only UK and Ireland.

For use 'on the road' (as opposed to 'at sea'), I wouldn't care to say that GPS is any better than a traditional map for the purpose of touring, largely because of the limited amount of information you can get on a screen and the fact that signposts around the country are really very good. But this is certainly a great deal more fun.

As for the driver using either of these programs in a moving car, it sounds too dangerous to contemplate. I suppose one could argue that they are no more or less distracting that the average in-car sound system. Positioning Ltd claim that their system is totally automatic and just provides information for the driver to read like any of the other instruments in the car. Indeed, the system was designed for sole travellers. Even so, I would still prefer to leave it to the navigator. AU

Product details

Product: Mapper (£14 to register) and AutoGPS (Remember to send a PC formatted disc, return postage and £1.50 handling)
Supplier: 3-Lib
Address: 22 Grays Crescent, Woodley, Berkshire, RG5 3EN
Tel: (01734) 265081
Mapper can be downloaded from http://ourworld.compuserve.com/homepages/slitchfield/gpsnotes.htm

Product: FindIt costs £99 + VAT on disc, the GPS receiver used cost £199 + VAT and the In Car Cradle cost £120 + VAT with serial link or £99 + VAT without
Supplier: Positioning International Ltd
Address: 54 Queen Street, Horsham, West Sussex, RH13 5AD
Tel: (01403) 276811

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425 or 540Mb to 1.6Gb - £169.00
850 to 1.6Gb - £129.00
Software transferred free.

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51 Heath Drive
Chelmsford Essex CM2 9HE
tel 01245 345263
fax 01245 345233
email sales@ajscomps.demon.co.uk
all prices plus vat and carriage

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FEATURE

Comparisons contrasts

The *Exploring a Contrasting UK Locality: Glasson* software package was devised to meet the need to integrate IT into Geography teaching and learning in the primary classroom. The Geography National Curriculum Orders state that children in Key Stages 1 and 2 should be taught to use IT to 'gain access to additional information sources and to assist in handling, classifying and presenting evidence'.

Why Glasson Dock?

Glasson is a village and small port on the Lancashire coast. A combination of geographical features make it ideal as a contrasting location. Although it is a small community, it has an industrial base, a range of transport features and it has adapted to many changes over time. Overall, because of its rich mix of settlement functions, Glasson can be contrasted with many other UK localities.

I decided to assemble a package on Glasson which enabled children to acquire and process information using IT. I would use authoring software alongside datafiles with information about local children and their lifestyles. The latter would be meaningful and also a vehicle for developing information-handling skills. I wanted the package to be professional in appearance, but simple enough to inspire children to produce something similar about their own locality.

Choosing the software

I decided to use *Genesis II* as the authoring software because of its potential to produce an attractive package in very little disc space, making it usable on all Acorn machines. I was very conscious that, although many schools use Acorn systems, most do not have state-of-the-art machines – in fact, the A3000 is a familiar sight in many of the classrooms I visit.

The insertion of photographs of the locality into *Genesis* was achieved by the use of Photo CD. I visited Glasson and took photographs of the key geographical features, including the Dock and the canal basin. I was lucky in that a ship was being unloaded and so I was able to take photographs of its cargo on the quayside and the mobile crane that is part of the port's facilities. The film was processed and a week later I had the Photo CD ready for use.

Having experimented with presentation software before, I was aware that the application needed to have a simple and uncluttered interface if it was to be successful. I chose a white background and included no more than two photographs or text frames on each *Genesis* page – 'frame' is the program's jargon for the rectangular boxes, containing text or graphics, that can be created on each page by clicking and dragging the mouse's left button.

Navigating and linking

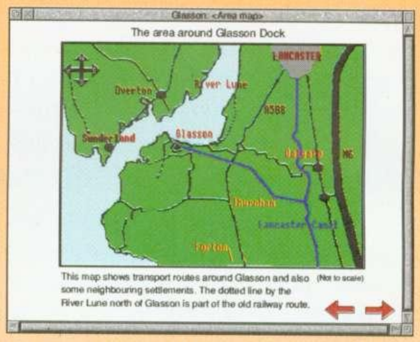
I decided on two methods of navigation through the package – the user could either go to relevant pages by clicking on the labels on a sketch map of the village or could move from page to page by double-clicking on right and left pointing arrows.

Making links from page to page was relatively easy as *Genesis* allows links to be made from any frame on any page. When the mouse pointer is over a frame, pressing the middle menu button on the mouse produces a menu with 'Link to' as an option. Sliding off this option reveals a set of possible linking actions which can be dragged and dropped on to the linked page.

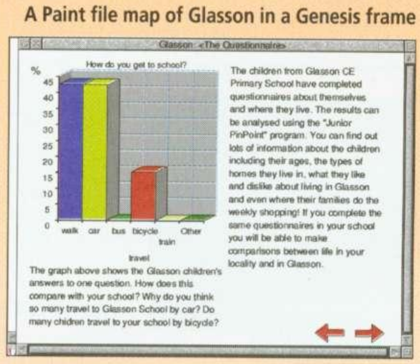
I used *PhotoView* to process the Photo CD images at a quarter of the base size and then transferred them to the frames I had created on the *Genesis* pages. Some image quality was lost, but I was able to squeeze over 20 colour photographs into the application! To save time I typed my text into *!Edit* and then dragged and dropped the text into frames on each page. The finishing touches were added using *!Draw* and *!Paint* files.

The most laborious part of the process was the establishing of links between the sketch map and the relevant information pages. Frames with red text were created over parts of the map and then links to information pages added by the process described above. By the time the page was finished it contained 16 links and was placing severe strain on the memory of my A3020.

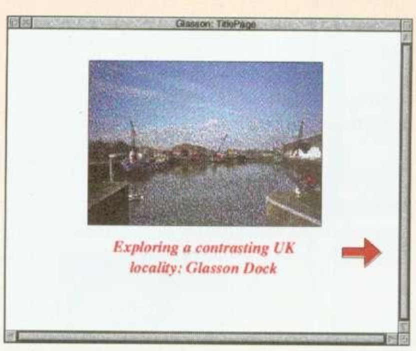
Needless to say, the machine crashed at this point and I was forced to re-create the page again almost from scratch. In the completed application, the village map



A Paint file map of Glasson in a Genesis frame



A link to the datafiles

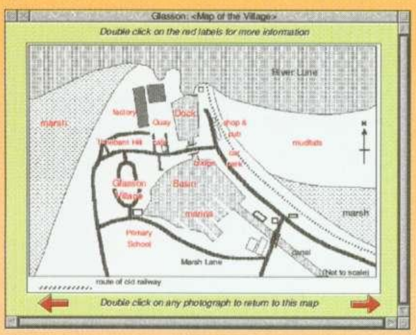


The Glasson application title page

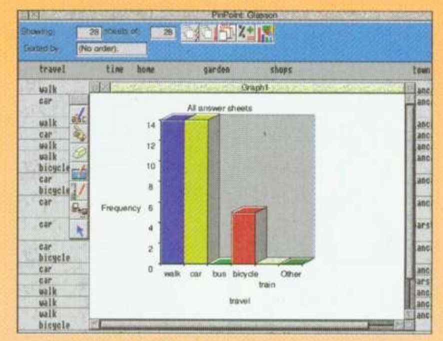
FEATURE

and

Tony Pickford (senior lecturer, University College Chester) takes us through the process of compiling a piece of software which integrates IT and geography



The most complex page shows a Drawfile map with transparent text frames on top



A PinPoint datafile created from questionnaires and a sample graph

page still takes longest to load and on any machine, apart from a Risc PC, it is advisable not to keep too many other pages open at the same time.

The questionnaire template

Having completed the *Genesis* application, I turned my attention to the datafiles. My idea was to create a questionnaire template using the *Junior PinPoint* program – this could be used to gather information from children in Glasson and re-used by children in other schools so that they could make comparisons between localities and lifestyles. After much consideration, I settled on the following set:

- What is your name?
- How old are you?
- How many brothers and sisters have you got?
- Where do you live?
- How do you get to school?
- About how long does it take you to get to school?
- What type of house do you live in?
- Does your house have a garden?
- In which shop does your family do its main weekly shopping?
- In which town does your family do its main weekly shopping?
- What do you like most about the place where you live?
- What do you dislike about the place where you live?

The questions had to be child-friendly and also a source for good-quality geographical information. I tried to mix personal questions, which the children would enjoy answering, with ones which addressed geographical issues such as the quality of the environment, journeys, transport links and housing. When setting up the questionnaire in *Junior PinPoint* I used the program's capability for defining specific types of questions; some requiring text answers, some multiple choice and some requiring numbers to be inserted. This mix of types enabled the data to be graphed and charted more effectively later on.

Using real data samples

With the questionnaire complete, I sent copies to Mrs Hall, the head teacher at Glasson CE Primary School, and also gave some to a teacher in an urban school. This enabled me to have a sample comparison datafile in the package. Both sets were returned quickly and I set about the job of entering the data. This was a rewarding task in that, once entered, the data could be analysed and explored to reveal some interesting comparisons and contrasts. There was not, for example, a marked contrast between the numbers of children living in different types of homes in the two localities.

Contrasts began to appear in areas such as the time taken to get to school and the modes of transport used. In Glasson, children's dislikes centred mainly on lack of facilities, although there were some idiosyncratic dislikes – one child hated 'the noise of tractors' and another child, who had recently moved from an urban area, disliked the dawn chorus of birds that woke him up in the morning.

Analysing data

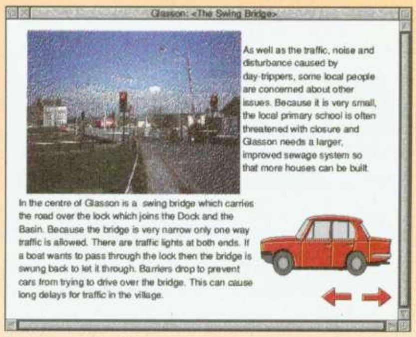
Use of the analysis tool in the *Junior PinPoint* program would allow children to find answers to questions such as:

- What is the average number of brothers and sisters in the two localities?
- Does it take longer for most rural children to get to school?
- What is the average time in the two localities?
- What is the average time it takes urban and/or rural children to get to school?
- Which is the most popular shop for weekly shopping in the two localities?
- Do rural families travel further, and to a wider variety of shops, than their urban counterparts?
- How do the types of houses in the two localities compare?
- Do all rural homes have gardens?
- What do the rural children like about their locality?

The final test

As a final test for the package I took it to Glasson school to show it to the children and their teachers. I will admit that I felt some trepidation at the prospect of showing my work to, possibly, its most critical audience.

In the event, the children were very enthusiastic about both the application and the datafiles. They pointed eagerly at the photographs and studied the maps carefully. Thankfully, I appeared to have got all my facts right and Mrs Hall was pleased at the prospect of being contacted by other schools who might use the package. AU



A converted PhotoCD image

Product details

Exploring a Contrasting UK Locality: Glasson is freeware.

By post: send three pre-formatted double-density discs and a stamped addressed envelope to Tony Pickford at University College Chester, Cheyney Road, Chester, CH1 4BJ

Alternatively it can be downloaded from the HENSA ftp site at ftp://micros.hensa.ac.uk/micros/arch/riscos/e/e088

More information is available on the web page at http://www.geocities.com/Athens/5732.

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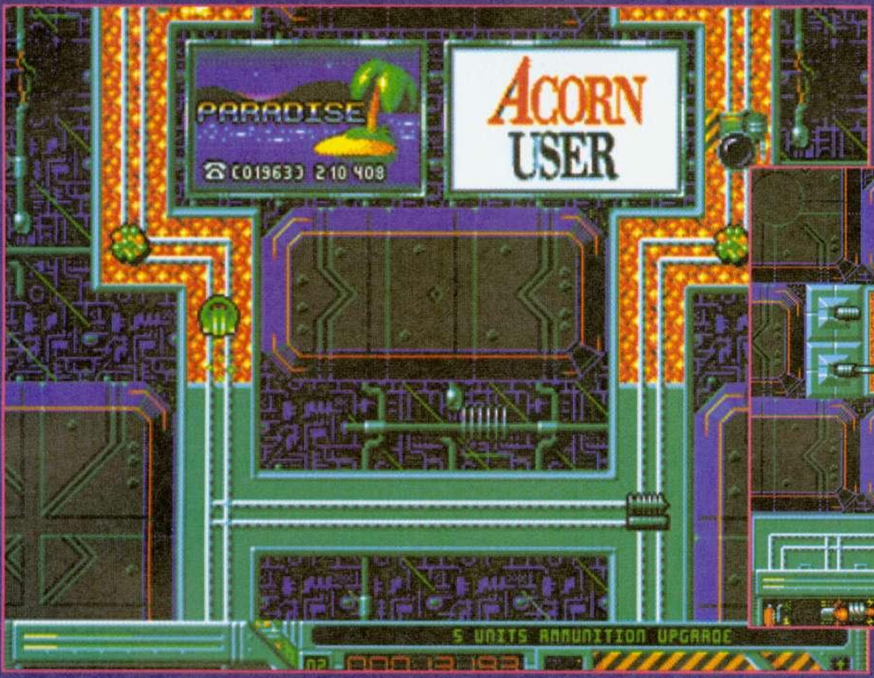
GAME SHOW

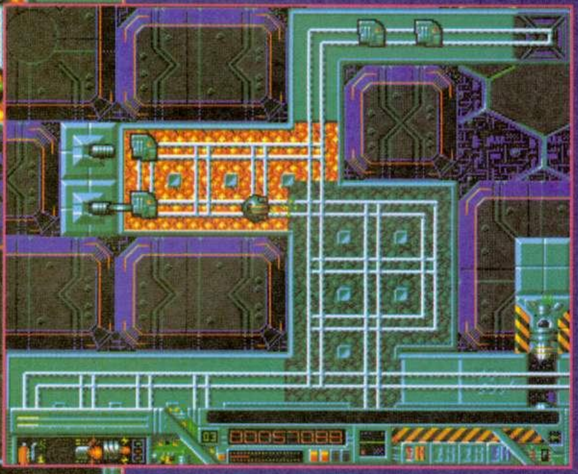
A gauntlet has been thrown down to any Acorn games programmers stalwart enough to attempt the challenge. Shaun Hollingworth of Krisalis Software has announced to the Internet at large that the company is willing to allow the release of *Soccer Kid* as a shareware title – providing an individual or a team of programmers steps forward and offers to code it. Shaun explains that Krisalis is performing this gesture as a sign of good will in return for the support that the Acorn community has given in the past. This is an excellent opportunity for any budding coders out there to get into the scene – the source code is available for both the Amiga and 3DO versions of the game, and perhaps most attractive of all for first-time programmers, you don't have to think of a storyline.

For those who haven't seen the game before, it revolves around a youth with exceptional ball control as he attempts to rescue shards of the World Cup trophy.

What makes this platform game that bit different is the fact that Soccer Kid can use his football to great effect – either in disposing of enemies or as a useful trampoline to reach higher levels. I was immediately attracted to its gameplay the first time I played, so the thought that it might be released for the Acorn platform comes as something of a dream come true.

The details are a little sketchy as I write, so if you're interested (and I urge you all to think about this seriously) drop me a line or write to Shaun directly at shaun@moatlane.demon .co.uk. A lot of people have been bemoaning the lack of activity in the Acorn games market; here's your chance to help turn things around – even if you don't know your registers from your SWIs, please give your support to this venture and let us know what you think.





Highly flammable

I'm happy to announce that Paradise has done its bit to relieve the somewhat persistent games drought that's been afflicting the Acorn world for the past few months. With the release of *Inferno*, the team has launched its own budget software range, and I hope it will be adding more games in the near future.

Paradise can be contacted at 12 Kings Close, Longburton, Nr. Sherborne, Dorset, DT9 5PW. They're wired up to the Internet, and you can drop a line by e-mail at info@paradise1.compulink.co.uk. Inferno costs £9.99, and cheques should be made payable to David Flynn.

As hard as a fluffy thing

Several months ago, I mentioned a game-in-progress by Mike Goatly, beguilingly named *Rock Hard Fluffy Thing*. Best described as an arcade-style puzzle game, *RHFT* follows the exploits of something akin to a furball on legs as he, she or it races round tortuous routes to collect diamonds. There are many traps to trick the unwary, such as slippery ice sheets and electrified tiles, and 35 levels to enjoy.

The game's finally complete, and it's available for £7 from Mike Goatly at 20 Ely Road, St. Albans, Herts, AL1 5NA – cheques should be made payable to M. Goatly. I hope to review the full game soon, but if you've got Internet access, you may want to wander over to the Acorn games section of ftp.uni-stuttgart.de, as Mike's told me he's uploading a demo there.

Cheats occasionally prosper

Richard Chiswell of Beebware has written to me to announce his latest games-related utility – a cheat database boasting '142 cheats for a wide range of Acorn games'. Requiring RISC OS 3 or above to function, Richard's program sits on the icon bar and gives access to a range of information snippets accessible at the click of an icon.

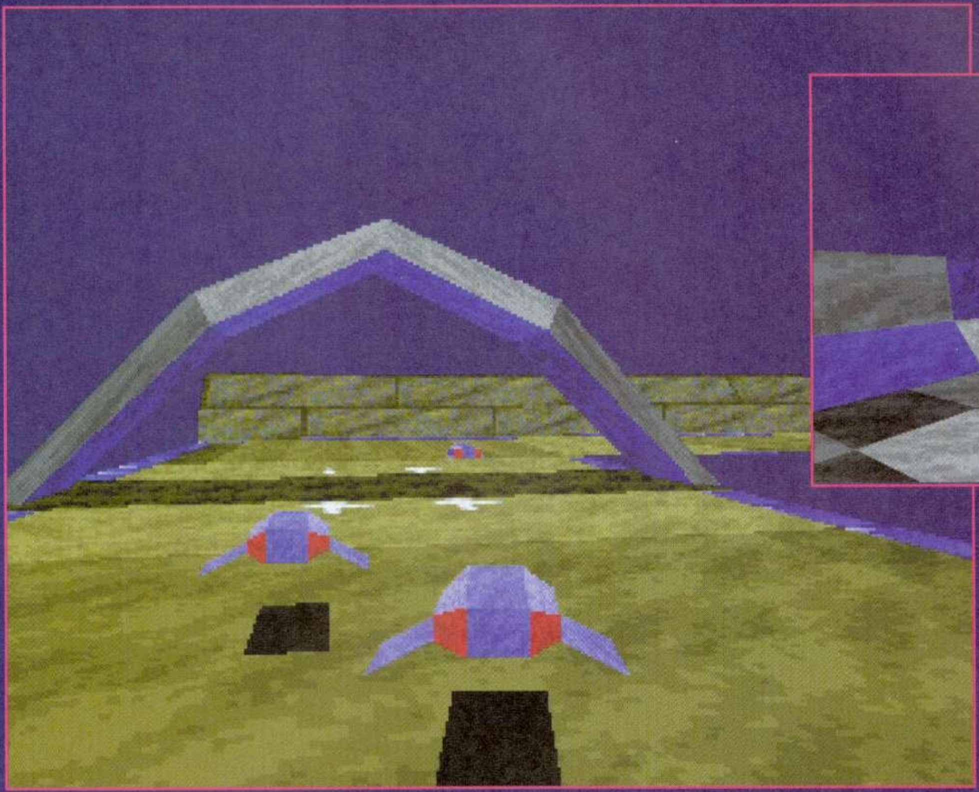
The range covered is sizeable, including some popular PD titles and a few Infocom adventures – quite a brew of different styles. The content of the tips varies, but generally speaking you'll get a list of passwords for a game, some hints to improve your gameplay or even a cheat mode or two. The material is all very useful, barring the odd spelling error here and there. You might find you recognise some of it; I couldn't say for certain, but a few of the tips seem particularly familiar – perhaps they originated in the pages of one of the Acorn magazines?

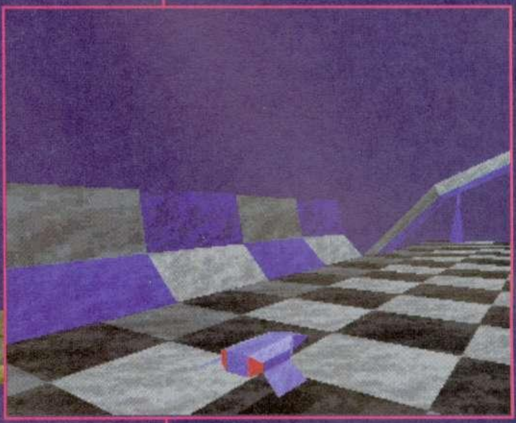
The utility also provides a few other functions, including a screensaver, a clock and an hourly time signal. It's a bit of a mystery why these have been included, for although they might be useful they certainly wouldn't entice me to spend any extra money on the product; there's a lot of good-quality public domain software out there that give this functionality and more.

If you're desperate for a cheat compendium, *Acorn Cheat* might be worth a look – however, it's rather expensive for what it is, especially if you can download one of the Acorn games pages on the Web or you've got stacks of back issues lying around. It costs £7.50 for a single user copy and Beebware, its supplier, can be contacted at 83 Forest Road, Huncote, Leicester, LE9 3BH.

Coming soon

I'm afraid I've no idea what Andrew Docking is going to call the title he's currently working on, so *Futuristic 3D Racing Game* will have to do for now. I





don't think I need to expand on the product's theme – which is fortuitous, as at this stage I know very little concerning the game's plot. However, Andrew's briefed me more fully on the technical nature of the game – texture mapping will be used throughout, although slower machines will be catered for with a *detail* option. The screenshots shown here are from an early stage in the development, and Andrew promises that the graphics will be much improved on in the final version.

With five craft to choose from, each with its own handling style, Andrew's game will allow you to scream round a wide array of tracks in tournament and practice modes, time trials or chase modes. He's currently working on an artificial intelligence routine to give the computer players a little more life, either making them nervous if you drive on their tail, or imbuing them with the silicon equivalent of road rage. I'll keep you posted with any developments.

I've just got time to mention a new strategy game in development by Chris Davis. Named *Age of War*, it's already visually impressive and the brief flick through the prototype manual leads me to believe that if it reaches completion, it'll be a most absorbing product indeed. I hope to receive some more information in the near future – if you've got any particular features that you'd want to see in the ideal strategy game, why not write in and I'll pass your suggestions on.

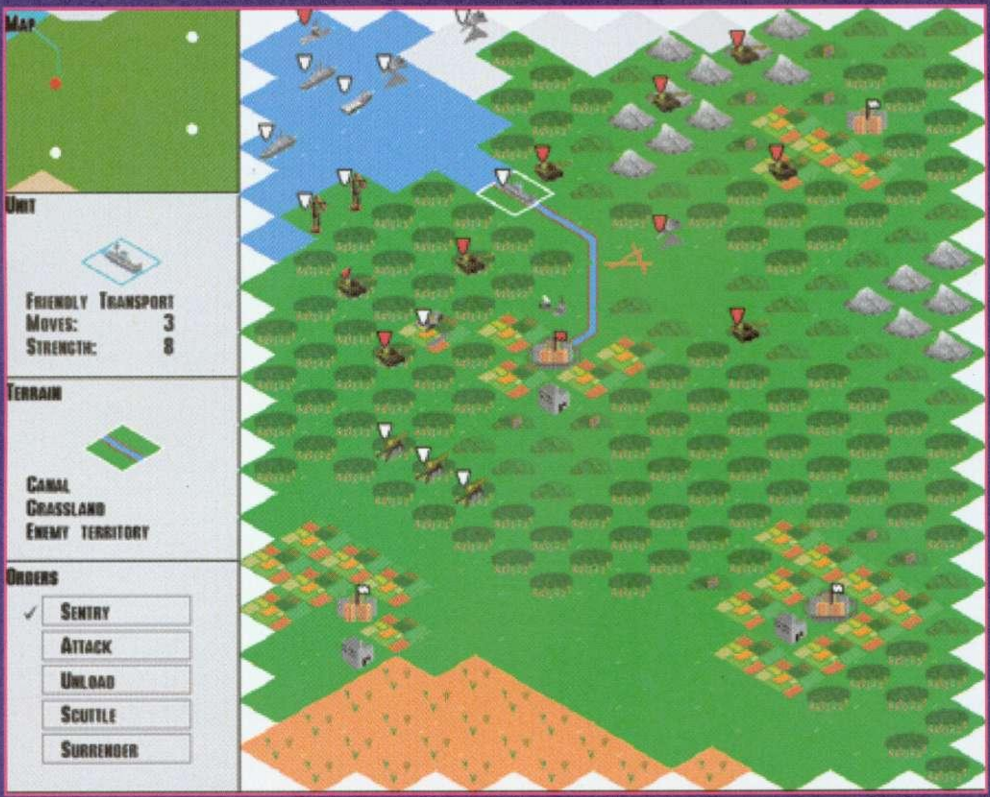
And finally

Let's have a quick straw poll. Rob Templeman was last spotted mulling over an idea to convert the engine of his game *Destiny* so that it would run on multiple processors on the Hydra. It goes without saying that this would affect the launch date, and it might even alter the gameplay too. After all, with oodles of processing power available, how many cuts to the game would be necessary before it would be playable on a low-end machine? Then again, I must admit that such a game running at full pelt on an Acorn dream machine causes me to salivate.

What would you prefer? An 'ordinary' game that runs at acceptable speeds on all machines, or one of mind-wrenching realism and wonderful visuals that needs a veritable clutch of silicon before it'll run properly?

The PC philosophy is clear – forget about the low-end users and aim straight for the processor's throat – but what do you think? Drop me a line at Game Show, *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or augames@idg. co.uk and let me know.

That's all space will allow for this month, but please join us again next time for more details of Shaun's *Soccer Kid* offer and updates on the progress of all of the major games-to-be. See you then.



Meet Hugo and GTAC

Graham Nelson reviews two designs for design

As our competition revealed, plenty of people write adventure games 'by hand', using no special language or tool. The Internet adventure community (see the newsgroup 'rec.arts.int-fiction') are pretty unanimous that one needs a design system though, and the question 'which system is best?', sparks off regular and infinitely tedious wars of invective.

Actually the options boil down to one: use the Brand X compiler to turn an X-file into some kind of program for an imaginary X-machine, and then use an X-interpreter to play this game program on any computer of your choice.

The idea goes back to 1979, when a group of students left MIT and founded Infocom. They wanted to move their famous mainframe game *Zork* to micro-computers. But it took a whole megabyte to run, at a time when a 16K Tandy was a mean machine by home standards. And until the late '80s, there were never less than a dozen home computer models in use, housing four or five different microprocessors: 6502, Z80, 68000 and so on. The individual markets were small and the challenge was to find a product to sell to all of them.

So Joel Berez and Marc Blank designed the 'Z-machine', a virtual computer using virtual memory. (In this they were far ahead of their time – 17 years later and the Java bytecode machine may soon be in every phone and television set.) Infocom then wrote 'interpreters' enabling individual computers to pretend to be Z-machines, and so to play the Z-code games. (Kevin Bracey's Zip2000 turns RISC OS into the Z-machine even today.)

The new Brand X?

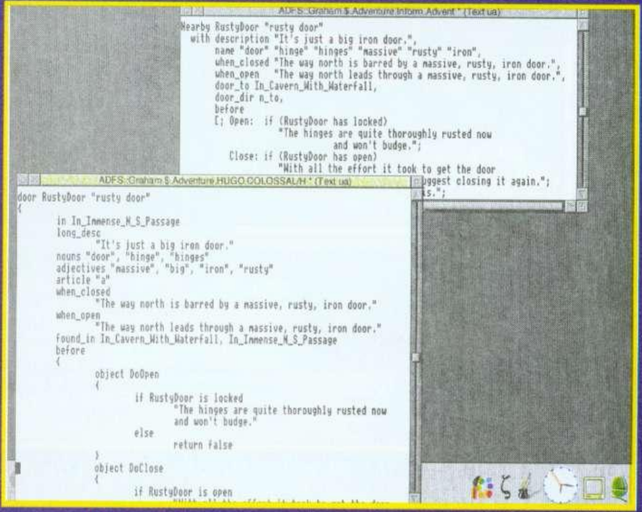
From Advsys to ZIL, adventure design languages are legion, though they vary widely in quality. Brand X, whichever is the current favourite, comes and goes; Brand Z, alas, is long gone, in that Infocom's own design language ZIL ('Zork Implementation Language') no longer exists. Inform compiles a language of its own to the Z-machine, but Infocom's compiler ZILCH is missing, believed deleted.

Up to about 1994, the popular choice was *TADS* ('Text Adventure Design System'), a ground-breaking compiler by Mike Roberts; since then, *Inform* seems to have taken the lead, so to speak, and *Hugo* is tipped by some to be next. *Inform* was so called because it forms Infocom files (sorry), but why 'Hugo', I've no idea. 'Hugo was a madman who believed he was Hugo,' as Cocteau put it, and that will have to do.

Hugo was begun by Kent Tessman only last year, and it has further to go, but people are starting to use it. It is extremely similar in design and syntax to *Inform*; whereas *TADS* is fairly different, and it may be worth a moment to say why.

Making sense of sense

All adventure languages agree on the basics. The world is modelled by 'objects' which may be places, people or tangible things such as a lantern: each will have some data attached, such as a name and a description, and perhaps some programming as well. The lantern has to respond to being rubbed or being switched off, and it's sensible to keep those parts of the program glued to the lantern's definition.



Parallel lines: the same program in Inform (above) and Hugo (below)

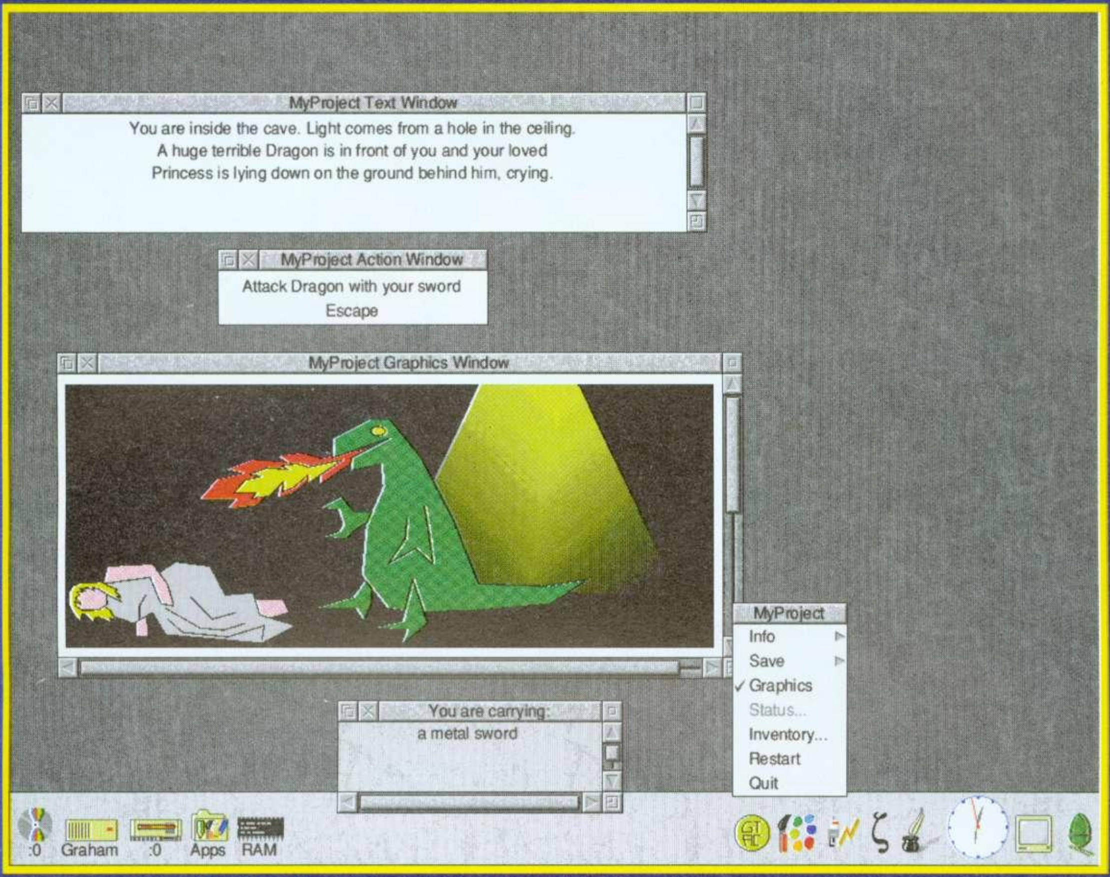
TADS, *Inform* (and *Hugo*) agree, also, that the best way to specify the world is just to specify the unusual things in it – the exceptions to what would normally happen. Thus, a grenade is much like any other lump of metal, so the game designer should only have to describe what happens when its pin is pulled.

Since unusual things are going to happen, it can be hard for a game to decide whether a player's command is reasonable ('look under the carpet') or insane ('look under the sky'). *TADS* and Inform differ on this. Under *TADS*, objects provide routines to 'verify' that verbs are sensible for them (for instance, 'eat' would not be verified by a brass bell, and 'ring' wouldn't by a banana). This information feeds back into the parser, which uses it to decide what the player intended. If the player typed 'eat bell', while holding a brass bell and a chocolate bell from a Christmas tree, the parser would be able to infer which was intended.

Inform, on the other hand, lets all grammatically correct commands through and relies on the objects themselves to sort out what is sensible, by giving rules that apply 'before' and 'after' what is suggested should happen. It's usually more concise, but maybe less elegant: the more I think about this, the less convinced I am that the right solution has been found.

The Hugo engine and compiler

Hugo has a compiler, for translating game descriptions into games, and an 'engine' for playing them: these are called 'hc' and 'he'. The standard distribution also comes with a concise and cleanly-written manual, and



Suzanne Vega, complete with brief sound sample, threatened by silent dragon

two example games: *Colossal*, the obligatory translation of the original mainframe adventure, and a *Sample*.

Hugo's syntax is so very close to *Inform*'s that they are almost machine translatable. I see this as a compliment, and Mr Tessman is entirely open about it. It is a smaller and tidier language, which is a good thing, but with defects: C programmers will not be pleased that the '.' operator is right associative, so that 'lilypad.frog.tongue' does not mean 'the tongue of the frog on the lilypad', i.e., '(lilypad.frog).tongue', but is instead meaningless. Likewise, bracing with 'if' and 'for' statements is not quite right, and 'switch' evaluates the quantity being tested more than once, which is questionable. But these are niggling criticisms and will probably be seen to in future.

Hugo is not without innovation: it has an interesting idea of 'events' programmed to happen in various circumstances, and of 'scripts'. Most games have characters who wander around, picking things up and generally making a nuisance of themselves. If they are to behave mostly predictably, a Hugo 'script' is a neat way to program them.

The compiler 'hc' is in good working order but reports errors erratically or, in a few cases, not at all. On my Risc PC it runs rapidly and without memory trouble; for comparison, Inform 6 compiles *Advent* in 10 seconds, and Hugo 2.2 compiles *Colossal* – a direct port of *Advent* – in 39; but both are much faster per source line than (say) Acorn C/C++, and speed will not be a problem in practice.

Product details

Product: Hugo 2.2
Author: Kent Tessman; RISC OS port by Colin Turnbull
FTP: ftp.gmd.de, under 'if-archive/programming/hugo'
Price: Free

Pros: Clean design • Good manual • Full scale language

Cons: Compiler slightly primitive • Perhaps too like Inform to be much alternative

The *Hugo* 'engine' design has similar limitations and virtues to the Z-machine: no graphics or dramatically lavish text, but good portability across a range of machines. The RISC OS port of 'he' is single-tasking, playing games in a chunky text mode with the system font, but is rapid and works perfectly. It will play, monochrome, in a desktop TaskWindow, but even under *Zap* on a Risc PC this is slow.

For all my reservations, *Hugo* is one of the handful of design systems to seriously address a complex problem: if it can be kept clean and neat as it develops, it'll go far.

And now, GTAC

GTAC (Graphic Text Adventure Creator), by Andrea Gallo, has different ambitions. It's a desktop editor for creating simple point and click games, with just a short menu of options for the player at each point. *GTAC* makes the most of this very limited idea of 'adventure game' by allowing graphics (Draw files) and sound samples to be added.

Animation and more flexible control over graphics are not available, which is a shame (it would be nice to be able to run short BASIC programs); and it's impossible to ask the player any kind of question which isn't multiple-choice, a pity as *GTAC*'s best use might lie in writing educational games.

On the plus side, *GTAC* has variables and a built-in 'combat system' in the style of a role-playing game. The registered version comes with a nicely-typeset 25 page manual, easily readable at a sitting; and the desktop interface is straightforward. There is one, very small, worked example game; Mr Gallo rightly says it is quick to construct; then again the average player will finish it in about 20 seconds.

'Interactive game books', so called, mazes of numbered paragraphs to read through and make choices between, used to be quite popular. *GTAC* is how you might computerise them, though I rather think the computer is what made them obsolete.

Product details

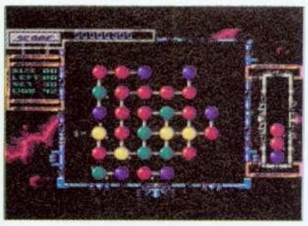
Product: GTAC
Author: Andrea Gallo
Address: 237, Viale Cortina d'Ampezzo, 00135 Roma, Italy
Telephone: +39 6 35 50 60 14
Price: £7 (or 15000 lira)

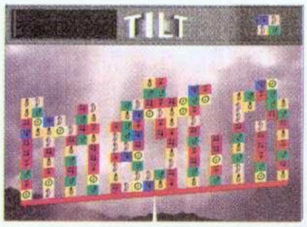
Pros: Simple • Well desktopped • Nice manual

Cons: Limited range of possible games

NOT *ONE* BUT *TWO* NEW RELEASES FROM
THE FOURTH DIMENSION

Logic Mania



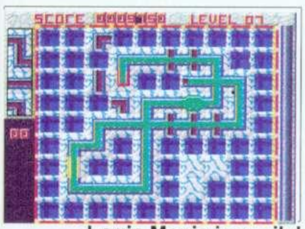


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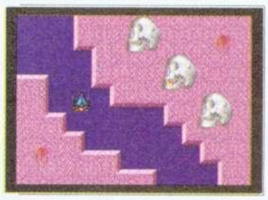
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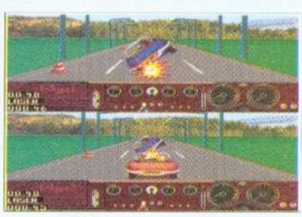


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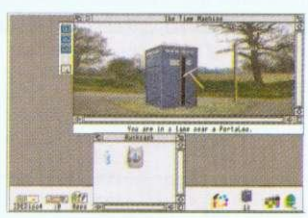
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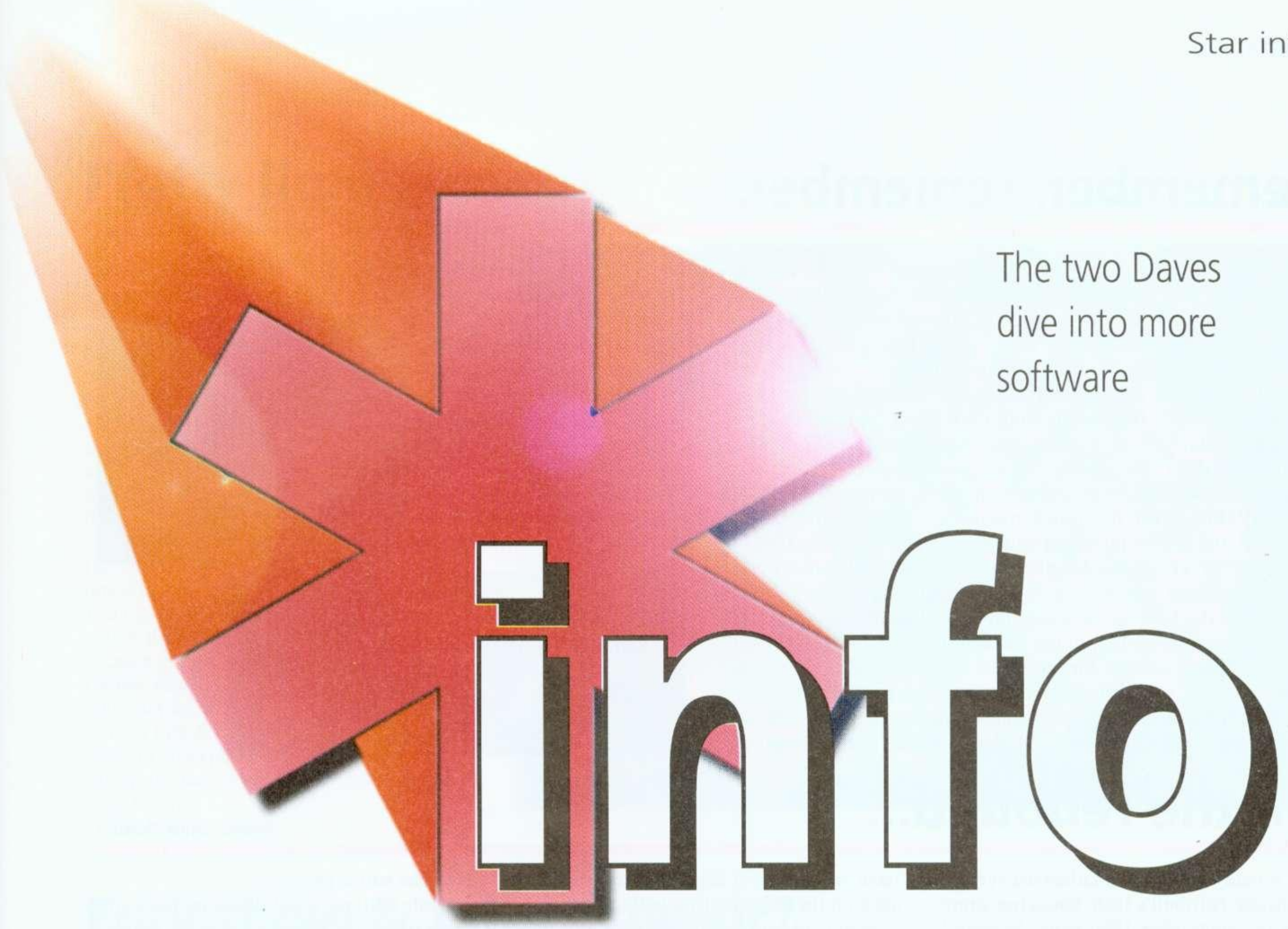
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• Wanted: reasonably priced Psion or Z88 portable for young writer. Tel: (01883) 342085.
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The two Daves dive into more software

Gamma redirection

Author: Fred Williams

Fred has been tinkering with the palette on his RiscPC and has come up with a novel use for a long-neglected feature of RISC OS 3.5...

"One of the new features of the RiscPC that seems to have been ignored for an awfully long time is the hardware gamma-correction. So what's that then? Well...

"The video circuitry gets a pixel's worth of screen data. It converts that into RGB values using the palette. Unless, of course, you're in a 16 or 24 bit mode, in which case, the pixel defines the colour. Then – and this is the important bit – it runs the R,G, and B values through three lookup tables to determine the brightness of the pixel ouput to the screen. And, joy of joys, RISC OS lets you play with these tables.

"The relevant call (see the Programmers' Reference Manual volume 5, or 5a if you've got it) is:

PaletteV (vector &23)

Reason code (in R4) = 9

R0 points to a 256-byte "red" lookup table

R1 points to a 256-byte "green" lookup table

R2 points to a 256-byte "blue" lookup table

"This returns R4=0 if the video drivers 'support' the function, in which case, your tables have been squirrelled away into system workspace. This, of course, begs the question: are there RiscPCs, or future Acorns in general, that don't support this? I don't know.

"To call this routine, you can use the "OS_CallAVector" SWI, which takes in R9 the vector number (&23 in this case) and the other registers set for whichever vector you want to call.

"Now of course, you could be really boring, and actually use it for gamma correction (which basically means biasing the tables towards 255 or 0 to make the picture brighter or darker). Or you could fade all the colours to black (or any other colour) and use it for switching smoothly between two images (which is what I was looking for when I found this call...)

"But why be dull? My program 'phases' the red, green, and blue tables independently of each other. The display is 'whatever happens to be on your desktop at the moment'. The great thing about using the gamma-correction is that it doesn't matter what 'depth' of screen mode you're in, but I can recommend switching to a 24-bit mode, loading up the 'fruit' JPEG (image 'sa09' on a RiscPC's hard drive), and then running the *Gamma*. Hit Escape when your eyes start to go funny..."

Bar code

Author: Andrew Kemp

You may have wondered why there wasn't any text to accompany *Toggle* which appeared on September's cover disc, well, it's here at last.

This little piece of code helps you unearth your icon bar from under a heap of windows using just the mouse. Andrew says "the idea for *Toggle* came from Guttorm Vik's excellent text editor, *StrongED*. I am a *Zap* user myself, and I thought this feature was too useful to live without."

As you will no doubt be aware, RISC OS provides a key to toggle the icon bar – Shift F12 in fact. However, mouse addicts can simply install *Toggle* and click Menu with the mouse at the very bottom of the screen. The module works by intercepting the event vector, waiting for a suitable mouse click and then inserting a Shift F12 into the keyboard buffer. Note that because the raw mouse event is spotted, this works even if the icon bar is completely obscured by a window, although you may inadvertently bring up a menu in the process.

As an alternative, if you are a *Director* user, you might like to add the following item to the *Close* menu (in *!Director.Menus.System*):

```
Dash
  Option "Iconbar"
    Command ProcessKeys ^F12
```

where ^ should in fact be a true up arrow (ALT 139). Now clicking Menu over any close icon will allow you to toggle the icon bar in the same way.

Remember, remember...

Author: Keith Atkins & Scott Bonham

...the end of October. Well, yes, I know some of you may well be reading this well before Guy Fawkes night, but as this is the November issue, we feel duty bound to provide something in the way of pyrotechnics. In fact, we have not one but two little demos. The first is from Keith Atkins of Bishops Waltham.

It's basically one of those 'lots of sparks pouring out of a box' numbers. When it's finished its stuff, click Select for another burst or Adjust to quit. Holding down Select will provide a continuous stream of sparks. The demo can be tuned according to your machine's capabilities by changing some of the variables.

MAXSPARKS is the maximum number of simultaneous sparks (and tails) and can be increased with a corresponding reduction in speed. SPK_OCNT sets the length of a spark's tail and values other than 16 can give interesting, if not particularly useful results. !DELAY sets the time lag between stars and should be set to give a graceful display according to the speed of the machine. By default it is one which is suitable for the A3000 on which the program was written. !MAXBURST is the total number of stars in a burst.

Our second seasonal offering comes from Scott Boham of Romsey in Hants. This is more your 'starburst' affair. Again written in machine-code for speed, this demo also plots the progress of a load of stars (500 by default) as they explode from a randomly chosen point and fall under the influence of gravity. This program runs rather too quick on a RiscPC, so you can either increase the number of stars to something ridiculous (try 10000!) or add a few more WAITs by copying the "OS_Byte" line a few times after MOV r0,#19.





On the rebound...

Author: Jamie Shotton

This is really just a much-enhanced version of Alistair Turnbull's little bouncing game from the September 1996 issue. *!Rebound* features custom game screens and two player games. It is a good example of the ultimate in one-key games.

To get a flavour of the game, try one of Jamie's example screens out (there are two supplied on the cover disc). Install *Rebound* in the usual way. Then drag *Maze* onto the *Rebound* icon. Now click on the icon with Select and choose Custom game. Select Start the Game and play.

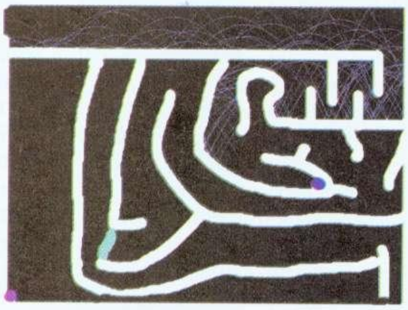
The object is to guide your bouncing dot to the safety of either the right side of the screen or (in the case of some custom screens like *The Maze*) to the purple area. Each player has only one key which acts as an upward thrust. For player 1 this is Space; for player 2 Enter. Otherwise, it is only gravity and the bouncing effect of the white walls that determine where your dot ends up.

Dark blue areas will, when hit, unlock light blue ones – you will need to do this to finish *The Maze*. Yellow areas are fatal and should be avoided at all times. It is also fatal to fall off any side of the screen other than the right. Red areas, when encountered, will transport a player to a random position – so beware!

To change the number of players, select Players from the icon bar menu. Player 1's dot is light blue and player 2's is green. To have another go at the same screen simply click on the *Rebound* icon with Adjust.

When playing a standard game you have the choice of three block styles and can choose the game number. This is effectively a random seed from which the pattern of blocks is determined – the same number always produces the same screen. Select Randomize to pick one at random. After a game you are able to view the high scores or enter your name amongst them if you have done particularly well.

To create your own custom screen, use the Custom submenu from the icon bar menu. (If you just select Custom it will show the currently loaded custom screen if there is one.) When creating a new game, enter the name and that of the designed (i.e. you!) You can add a yellow border if required and blocks may be shown along the left side. When ready, select Edit to enter the editor proper.



While editing, Select draws fat lines and Menu thin ones. Adjust finishes the editing process. A number of keys have effects during editing:

W	selects white (normal wall material)
B	black (for deleting)
Y	yellow (fatal to players)
P	purple (hit this to finish)
L	locked (shown as light blue)
U	unlock (shown as dark blue)
T	transport (shown as red)
H	hidden (shown as white in the game but which cannot be hit by the player)
Insert	shows yellow border and side blocks temporarily
Alt	draws a rectangle in the current colour

Jamie uses his own file format for saved files and the screens are compressed. The compression process takes a few seconds. The game needs to be stored on a writable medium since it creates a blank high score table, so copy it to your hard disc or another floppy before use.

Rebound was written in C on an A5000 and should work on all machines. It uses mode 27. Inside the *!Rebound* directory is a file called speed. Change the number in this file to control the game speed – the higher the number the slower the game.

Sci-fi hi-fi

Author: Graeme Jefferis

Time to dig out your copy of *Flux* and give this *Digital Symphony* track a spin. It is certainly one of the best and most different we have receivied. The creator of *60sSciFi* says it sounds a bit like 'Lost in Space'.

Flux is the ideal tool for playing this track as with just a few presses of the space bar you can conjure up state-of-the-art early Dr Who-like special-effects to match the mood of the music.

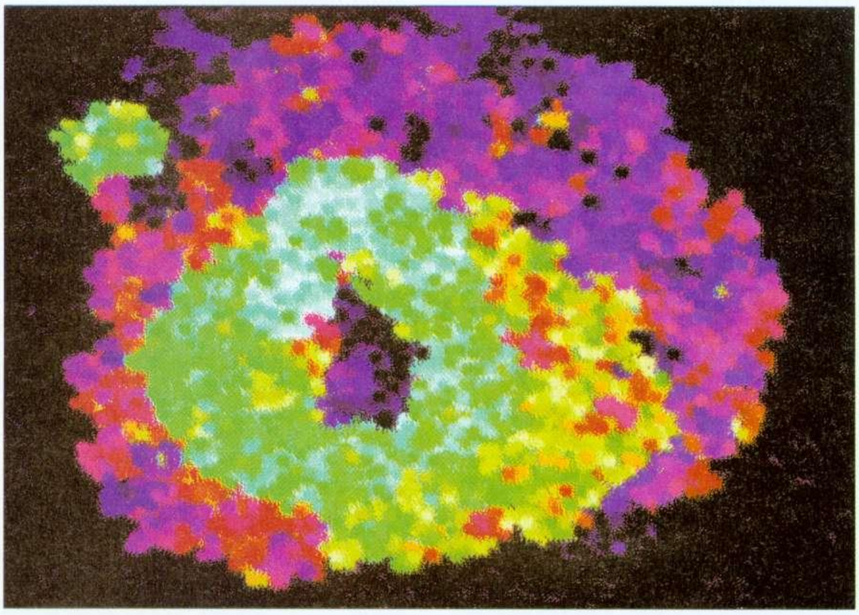
Pretty lights

Author: David Llewellyn-Jones

"This is a graphic doodle" says David Llewellyn-Jones in a moment of understatement. In fact, this program continues our seasonal pyrotechnic theme in that if Monet had ever gone into the firework business, this is probably what he would have come up with.

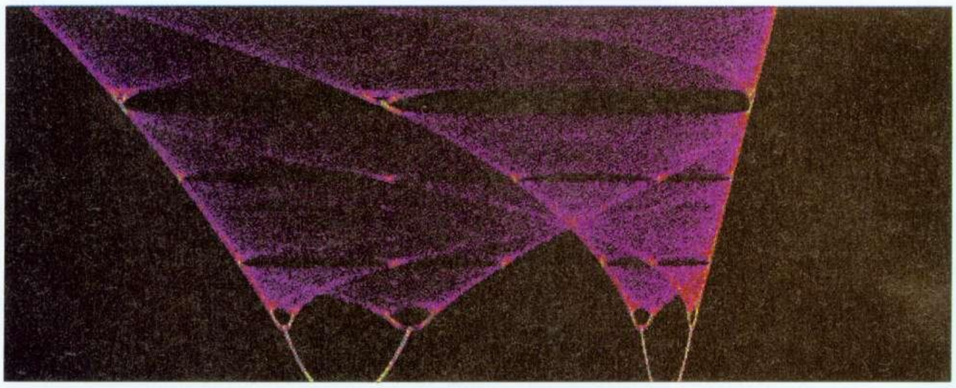
David wrote *Lights* on a RiscPC but says it should work on any machine which supports mode 28, albeit at a more sedate pace. Perhaps the most remarkable thing about this demo is that it is just 150 lines long.

The program is interactive in such a way that pressing and holding a mouse button down has an 'explosive' effect – try it and see. You can also change the *Lights* icon in *!Sprites* which double as the brush used for plotting. Because of the way the program works, even colours should be used for the foreground and odd ones for the background. The bottom bit of each byte is effectively used as a mask. "It's difficult to explain the effect which altering the sprite has" says David. "It's best just to experiment."



Fork show & Julia – see sir?

Author: Alistair Turnbull



A pair of graphical masterpieces, the first goes under the rather enigmatic title *CX(1-X)*...

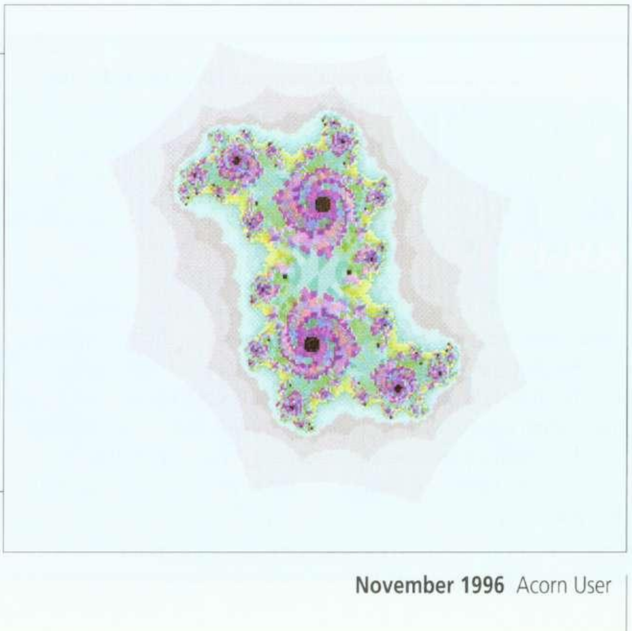
"This is a glorified bifurcation diagram, named after the formula that generates it. The glory consists of density-dependent colouring and motion blur. I've redefined the mode 15 palette to make it smoother.

"When it appears to have stopped, it is actually moving gently up and down within a pixel, because this produces a pleasing sparkle."

We've rather lost count of how many fractal demos we've carried in these hallowed pages over the years. It takes a particularly fine programming talent to come up with something in the genre that's worthy of fresh column inches. In this case, Alistair has dramatically improved his earlier renderer of that most famous of sets, in the shape of *Julia2*.

"This is an updated version of the program you carried over a year ago (in June 1995 in fact). This time, it's written properly. I've managed to squeeze 12 iterations out of each recursive level, as opposed to six, and I've managed to increase the maximum number of iterations to infinity by detecting loops. It's about twice as fast, too.

"It should be possible to write a version that draws the Julia sets for different functions. In particular, I'd like to do the trigonometric and hyperbolic functions using Runge-Kutta (as used in last month's *PoorJenny*). You may see this in the future." Well, watch this space...



HANDS ON

DOSsing around

Author: Dr Tony Lindop

This is something of a reunion issue, as our next contributor was also featured back in June 1995 with Alistair Turnbull and Jamie Shotton. This time Tony provides a little help for those using PC cards or PC emulators. *!DOSfsmap* sets up a whole host of mappings from DOS filename extensions to Acorn filetypes.

"Run this application to generate a set of RISC OS sprites which correspond to DOS file extensions. DOS file extensions are mapped to RISC OS file types via the DOSMAP statements in the *!Run* file. These statements are in alphabetical order of the DOS file extensions. A set of Sprites have been included in the *!Sprites* file, which correspond to the RISC OS file types. The individual sprites are listed in descending numerical order.

"Sprites for filetypes &FFD to &405 have been extracted from the *Acorn User* CD-ROM and PD software. Sprites for file types &0FF to &0BD have been either generated by hand or extracted from Windows Icons."

A list of all the extensions supported is provided on the disc as a text file *list*. This details the RISC OS filetype, those DOS extensions to which it corresponds and a brief description of the nature of the filetype. If space permits, an *Impression* version of the document will also be included. Tony would like to acknowledge R J Cohn (AU February 1996) for the original idea and list.

To compliment *DOSfsmaps* Tony has also supplied a pair of BIO modules. For those new to this magazine, *BIO* was a modular utility we carried many moons ago and to which we have added modules from time to time. In case you haven't got a copy, the cover disc includes a fresh one with Tony's two new modules.

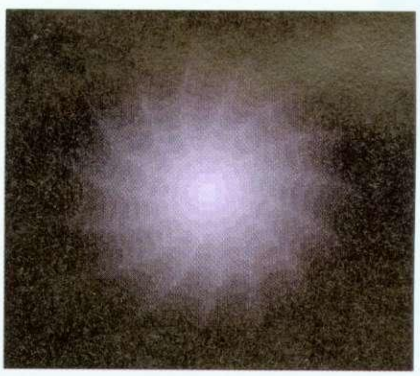
The purpose of the modules is to convert PC icon files to Acorn sprites and vice versa. Simply drop the source file on the appropriate icon and after processing, save in the normal way. Tony used these BIO modules to generate some of the sprites used in *DOSfsmaps*.

A challenge

It's a while since we set you a programming challenge, so to get your well-rested brain cells whirring, here's a little programming exercise for you.

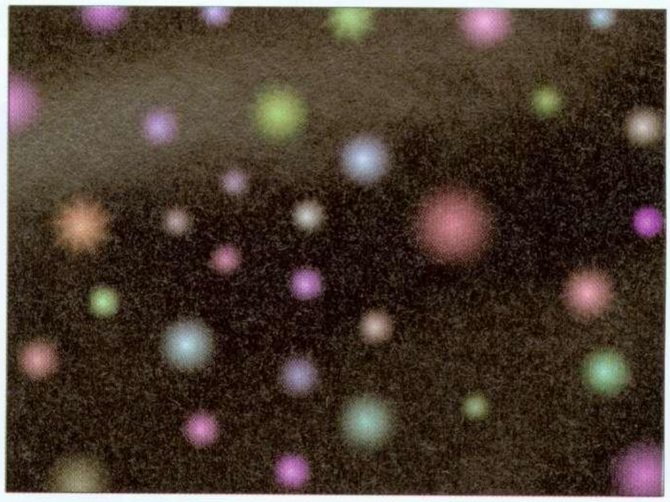
The challenge is to write a graphic ditty that uses only circles to do its stuff. By way of an example, you will find the elegant *Shells* by our own Mr Lawrence.

The delicate shell-like creations are simply produced by plotting a series of rings of filled circles in fading hues. The program can run in 16, 256 or (on a RiscPC) 32768 colour modes – just alter the value of cols at the start. If you think you can come up with a similarly impressive circle-based display, send it in to us.



Your demo can be in C, Basic, machine-code or whatever your like. And you can use whatever methods you like to do the plotting – you just musn't cheat, circles only – no lines, rectangles or sprites – not even circular ones.

The judges (i.e. we) have the final say and will use our unfathomable expertise and discretion to select the best of your efforts for publication. Of course, originality will stand you in good stead. Please send your entries to us by **November 30th 1996** and mark your envelope *Circle Challenge* please.



*QUIT

Send your programs, hints, tips and musical offerings to:

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or, if your submission is **100K or less,** e-mail us (including your real address please) at:

austarinfo@idg.co.uk

You needn't include a letter but **please put your name, address and program title on every disc** and include a text file containing your name, address, disc contents and program details. Any extras like saved screens, drawfiles and background information are a pleasure to receive. A SAE will ensure your discs are returned. *info submissions only please – if you are submitting material to another section of the magazine it will be processed more quickly if you send it separately.

Compatibility table

Program	RISC OS 2	RISC OS 3.1	RISC OS 3.5+
Atkins Fireworks	No	Yes	Yes
Boham Fireworks	No	Yes	Yes
Shells	Yes	Yes	Yes
!Bio	No	Yes	Yes
Lights	No	Yes	Yes
Rebound	No	Yes	Yes
CX(1-X)	No	Yes	Yes
Julia 2	Yes	Yes	Yes
Gamma	No	No	Yes

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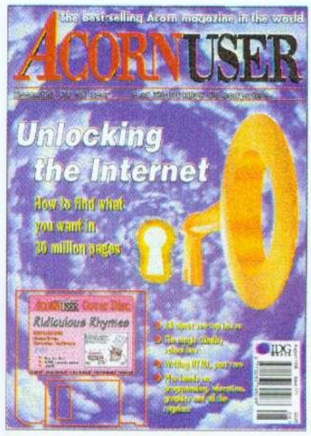
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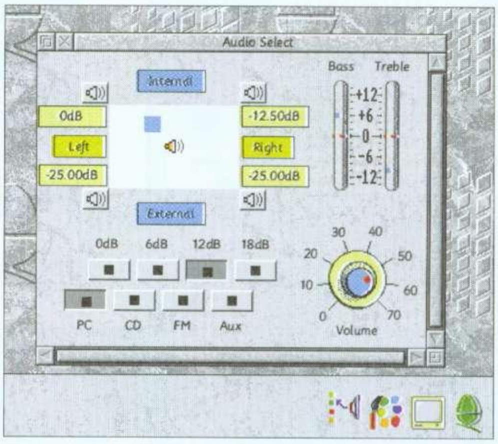
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Sounds simple



Mike Cook tidies up his sound system using an audio switching unit

Some people are very tidy. A past head of our department used to say: 'The state of your desk reflects the state of your mind'. He said it once too often to someone who was about to retire. He replied: 'I suppose yours is empty!'

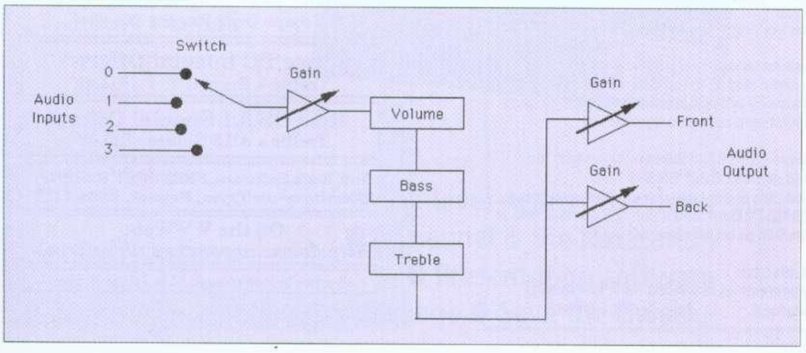
Now I have a certain clutter threshold, which is naturally higher than my wife's – once this is triggered, a mass tidy up ensues. The same thing has just happened with the sound system on my computer. It was all very well at first, but then I fitted a 16-bit sound upgrade and the sound was too loud, especially with the PC card. Then an internal CD drive was added and finally the FM radio I did for the September issue – something had to be done.

That something arrived in the form of the TDA7318 chip I spotted in the latest Farnell catalogue. It was called a *Digitally Controlled Stereo Audio Processor* so I sent off for the data sheet to see exactly what it would do.

Basically it can take four stereo inputs, switch between them and control the volume bass and treble before squirting the signal to two pairs of speakers. The great beauty of this chip, however, was that it is controlled by an I2C interface. This makes it ideal for controlling a permanent unit housed inside the computer as this interface is already built into the computer and we don't use any of the computer's precious interfacing lines.

A quick look at Figure I will show you the function of the chip. Remember, this is a stereo chip so there are, in effect, two of these systems inside the chip, for both left and right channels. After the input switching one of four gains may be selected, then the volume control cuts down the signal before passing it on to tone controls. Finally the signal is sent to two outputs – front and rear speakers. These outputs can also be cut down allowing you to balance between left and right channels and also between front and rear speakers. This was primarily designed for a car system where you can push all the sound to the back passengers during particularly annoying tracks of 'The Lightning Seeds' album.

Figure I: The functions of the TDA7318



Now, gain is simply a ratio of the signals at the input against those at the output, but for audio purposes this can be misleading. This is because the ear works in a logarithmic fashion so that an increase of gain of, say, five, sounds different depending on how loud it is to start with. If the sound is quiet it will be a big jump but if it is loud you will hardly hear any increase at all. So to make things easier sound is often expressed in terms of Bells, which is simply the log to the base 10 of the gain.

Well, it works out that a Bell is a bit big, giving numbers less than one for a gain representing a doubling of the sound, so we actually use units of one tenth of a Bell or a deci Bell. This is almost universally abbreviated to dB and pronounced 'dee bee'. So to express a gain in dBs all we need to do is to use: 10 Log (Gain). As this is power gain and we are normally dealing with voltage measurements another correction is made so that for most practical purposes we use: 20 Log (Gain).

Now the benefits for this are that it is very convenient to talk about gain in a way that is easy to understand. A doubling of the volume is simply an increase of 6dB no matter what the original level is. Therefore in a system like this we can get the overall gain by simply adding up the gain of each section as expressed in dBs.

A gain expressed as a negative number is a reduction or an attenuator and exactly cancels out positive gain. In this chip the gain just after the switch is positive and all the others are negative – bear this in mind when looking at the effects of each control.

Now it turns out that there is surprisingly little to add to make this chip work; the full circuit is shown in Figure II. The inputs are capacitively coupled and the capacitor between pins 6 and 7 couple between the switch gain output and the volume input. This is for the right channel with pins 16 and 17 doing the same job for the left one.

Pins 20 and 21 provide the bass filter and pin 5 the treble for the right side. Again these are complemented by pins for the left side. The two

pairs of outputs can be connected to the computer's internal amplifier through capacitors and the I2C interface signals are connected directly from the signals from the expansion back plane. The only slight snag is that this chip works off 9 volts not the usual 5, so we have to use a regulator to cut the computer's internal 12 volt supply down to the right value.

There could be a slight snag with construction – the chip comes in two types the TDA7318 and the TDA7318D, the difference being the packaging. When I made this project I could only get hold of the TDA7318D which is the surface mounting version, therefore, I also got a conversion header on to which you can solder a surface mount chip and get a normal 0.1' spaced IC.

Unfortunately the chip is slightly wider than the header and so I had to resort to bending the legs of the chip to make it fit, resulting in a very delicate soldering job. If you can, I would recommend you get the DIP (Dual Inline Package) version. I built the circuit on a small piece of veroboard hanging inside the computer. I arranged the connections so that the board came between the internal sound source and the internal amplifier using the front speaker output from the board.

There is only one speaker in my RiscPC 600 but when you use the external speaker socket you get stereo. I also brought out a socket for another pair of amplifier/speakers from the rear speakers output of the board. A word of warning here; the inside of the computer is sprayed with a conducting layer so don't rest the board on the inside plastic or some connections will short out.

So with construction over we have to write the software. This device has a fixed address of &88 on the I2C bus so we can only fit one on any bus. To control this device you simply write a byte to that address. The upper significant bits of that byte determine the function and the other bits give the data for that function – this is shown in Table I.

For example if the two most significant bits are zero, the other bits determine the attenuation of the volume control in steps of -1.25 dB. As there are six bits this gives a maximum value of -78.75 dB which is very close to nothing coming out. The other controls work in a similar manner – note the audio switch which has both the input switch position and the input gain.

For this project the software is not quite straightforward although it could have been. I could have simply used a software control for each parameter but you can put a bit more intelligence into it to make it very useful – it's called *!AudioSel* on the cover disc. The tone controls are implemented as simple sliders and the volume as a rotary knob.

Note the numbers on this knob represent the attenuation, but, because people expect to get a loud sound when the volume control is set to a big number, the numbers fed to the chip are inverted. This means that when you set the volume control to zero the chip is told to attenuate the signal by the maximum -78.75 dB, whereas a volume setting of 78.75 will produce zero attenuation.

It is in the speaker's attenuation where I have gone to town with the software and it took some time to work out. Basically all the user has to do is to drag a square around a box.

However, this controls the sound position in two dimensions thus allowing you to fade between left and right and front and back at the same time. Clicking on the central speaker icon puts everything back to no attenuation. In addition, by clicking on each speaker you can mute them, which overrides any attenuation.

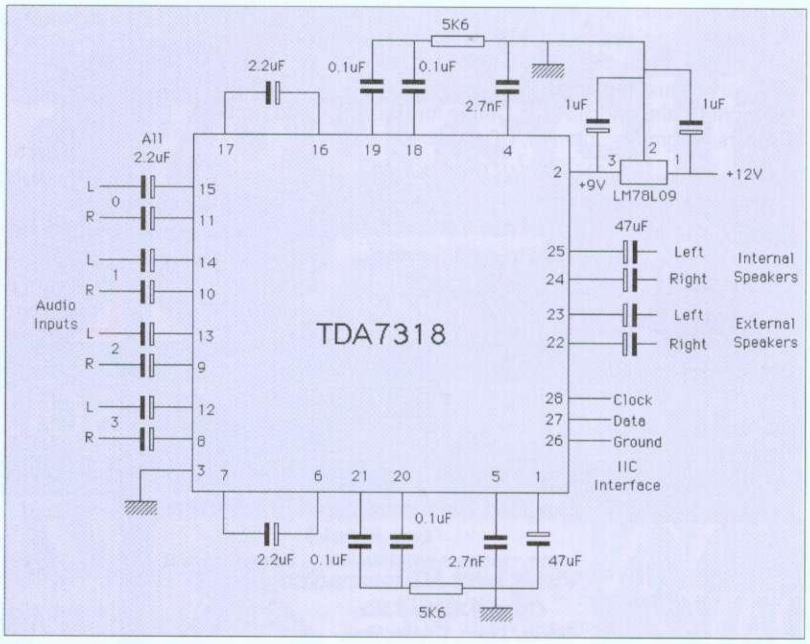


Figure II: The circuit of the Audio Switcher

Finally I arranged the software so that all the settings would be remembered for each audio input selected and that those settings are stored every time the device is quit. You don't have to do anything to save the settings; the next time the application is opened you will get exactly the same results. The input labelling is done in the templates file and can be easily altered to suit your particular setup.

Now I wanted to be able to preset the audio on power up or when certain applications were run like the PC card or the CD player. In order to do this I have written a second small application – *!PresetAud* – to preset the controls. All you need to do is include an instruction to run this in the !Run file of you application. The settings are taken from a file called imaginatively 'Settings'. This can be obtained from inside the *!AudioSel* application once you have quit from it and can simply be dragged inside *!PresetAud*.

So now I have my sound system tided up and I have one rather unexpected bonus. During the boot up sequence after a power on, the chip sets itself to zero volume so I have finally got rid of that intensely annoying beep – peace at last. AU

Table I: The register structure of the TDA7318

7	6	5	4	3	2	1	0	Function
0	0	A5	A4	A3	A2	A1	A0	Volume Control
1	1	0	A4	A3	A2	A1	A0	Left Rear Speaker
1	1	1	A4	A3	A2	A1	A0	Right Rear Speaker
1	0	0	A4	A3	A2	A1	A0	Left Front Speaker
1	0	1	A4	A3	A2	A1	A0	Right Front Speaker
0	1	0	G1	G0	0	S1	S0	Audio switch
0	1	1	0	B3	B2	B1	B0	Bass control
0	1	1	1	B3	B2	B1	B0	Treble control

Bits labelled A -1.25dB per step
Bits labelled B 2.0dB per step range 0 to +/- 14dB
Bits labelled G after inversion +6.25db per step
Bits labelled S - input channel number

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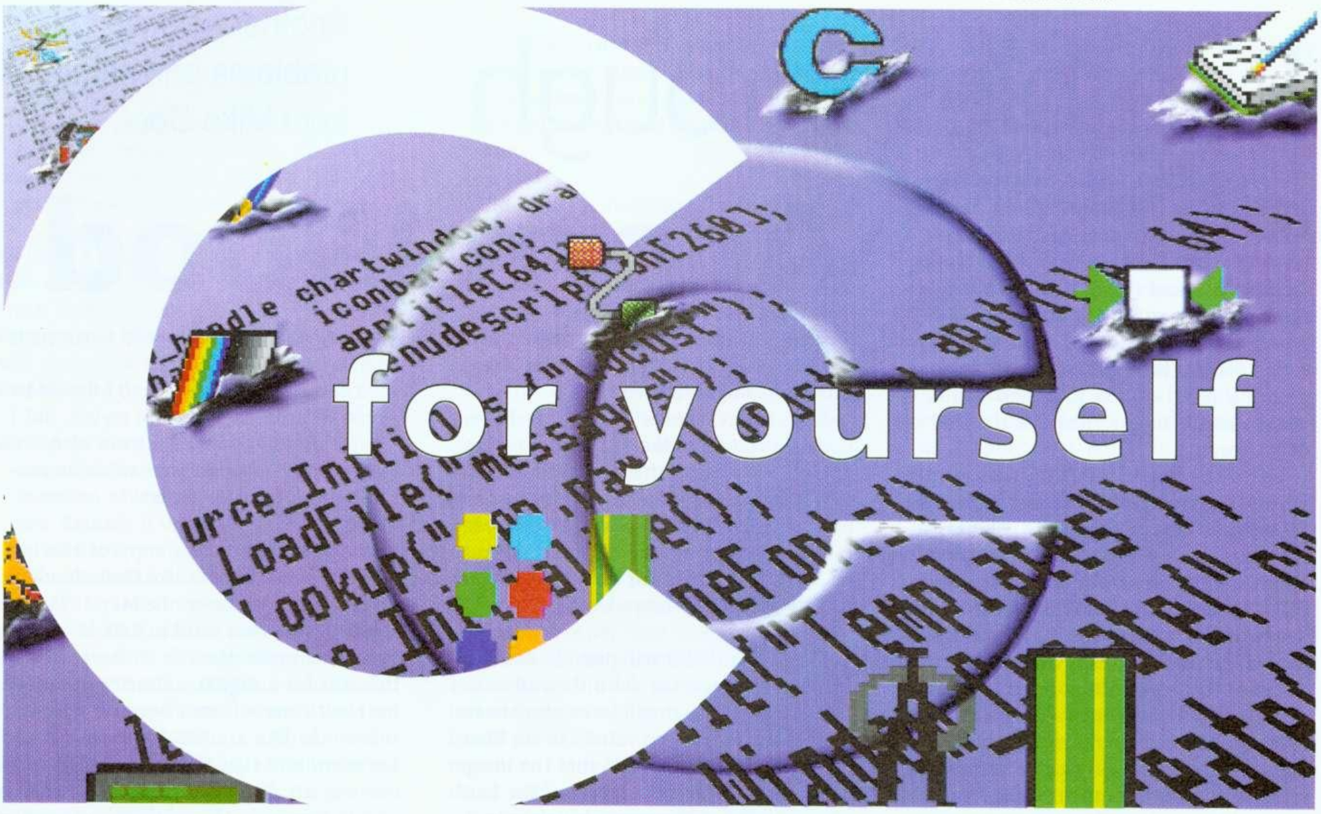
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C for yourself

Steve Mumford discovers that programming the WIMP's a drag

One of the crucial differences between RISC OS and the other graphical user interfaces that exist lies in the way that file transfer is accomplished – we take saving and loading data from applications, or even between programs, very much for granted. In Acornland, all we have to do is drag an icon – if we want to save or load something to or from disc, we use the standard filer windows. RAM transfer is equally simple – just drag the file over another icon on the icon bar.

We're lucky. On certain other platforms I could mention, each application ends up with its own file interface, needing a hefty amount of code and producing a situation where no two file transfer dialogue boxes are the same. The approach that Acorn followed means that the programmer just has to provide one or two functions and the WIMP will do most of the hard work – your program doesn't need to know the difference between a floppy disc, an IDE drive or a magneto-optical device; all it has to do is write data to a filename that the WIMP provides.

This month, I've included the preliminary tools necessary for file saving in the example application – loading it from the cover disc, opening the *Save* window and dragging the icon will provide you with a dotted box that you can happily move around the screen. That's all it does for now, but we'll get on to the actual task of saving soon.

In order to make an icon draggable using the *Acorn User* library, you should first set its icon button type to be 'click and drag' (type 6). Whenever the user tries to perform a drag operation on the icon now, your task is passed the number of the mouse button used (*Adjust* is 1, *Menu* is 2 and *Select* is 4) multiplied by 16, to indicate the fact that the icon is being dragged.

You should then listen out for any **Mouse_Click** events occurring within *Wimp_Poll* that match the appropriate window handle and icon number – all you need to do then is call **au_dragbox()** with the appropriate values. Everything else is taken care of – **AULib** interrogates the icon and its window to discover the exact position of its bounding box on screen, then **Wimp_DragBox** is called to handle the familiar rotating dashed line. Here's the snippet of code from the example application that starts the procedure, all within the **mouse_click()** function:

```
if((au_bytetoword(poll_block,
12) == win_data[2].win_handle)
&& (clk == 4*16)) {
icon_num =
au_bytetoword(poll_block, 16);
if(icon_num == SAVE_ICON) {
au_dragbox(au_bytetoword(poll_
block, 12), icon_num);
}
}
```

The first line checks that we're dealing with the correct window, and the drag operation has been started with *Select*. After that, we grab the target icon's number from the poll block and check it to see whether it's our save icon. If it is, we perform a function to start the usual drag box, and return to our polling loop.

After that, all we do is sit and wait for a **User_Drag_Box** event (type 7) to be reported to us via **Wimp_Poll** – this indicates that the dragging operation has finished and all buttons on the mouse have been released. At this stage in the procedure of saving a file, we would call **Wimp_GetPointerInfo** to discover which window the pointer was over at the moment when the drag operation ended.

From there, we can send a message to the Filer using that information and supplying a file name, type and approximate size – this allows the Filer to check whether the operation is feasible. Once our application receives a **DataSaveAck** message, we can get down to the low-level process of writing the file. The message-passing procedure might seem a little convoluted, but it means that saving between applications can be handled very simply using the **Wimp$Scrap** directory.

Data loading follows the same general scheme, although we don't have to go to the trouble of drawing the drag box, as someone else will be doing that for us – again, we listen for **User_Drag_Box** and check to see whether the file was dropped on our icon bar icon. I'll fill in the code necessary for these functions next month. AU

Rambles through Acorn Wood

Another selection of problems and solutions from Mike Cook

Good news this month about my saga over my quad speed CD drive I bought from Yellowstone – it's finally working at quad speed. I received the correct driving software days after last month's copy was due in. I can now transfer a 10M file into RAM FS in 18 seconds, giving a speed of 555 K/second which is close enough to the theoretical speed of 600 K/second.

I've been experimenting this month with a digital signal processor starter kit from Texas Instruments. This is a neat little board with a processor, memory and 14-bit digital input/output, all for under £100. It uses the TMS320C5 processor and needs the PC card to run it. Digital signal processor or DSP chips are specifically designed to support the sorts of operations you need in digital filters and communications circuits. For example, you have registers that work in circular buffers and multiply and divide instructions.

It works, or should I say nearly works, on the PC card because it suffers from the occasional crash and the test programs sometimes report a fault with the serial communications. Now in my experience this is not uncommon with hardware designed to attach to the serial port. As well as my own experiences of this DSP board and a logic control programmer I have had reports of problems from two readers about radio communications interfaces.

From my investigations I think I know why this happens. PC software controlling hardware expects to be able to access the serial port and its data registers in a specific amount of time. Now while the PC card has a real processor on it, the RISC computer still has to emulate a normal PC's hardware. This is much slower than having the correct hardware and is known as the latency time.

While this is reasonably short for the serial data registers, it is comparatively long for the status registers. Hence a software program that uses the handshaking lines for data transfer or relies upon seeing how long a byte takes to turn around will think there is no hardware present. This can sometimes be solved by running at a lower baud rate but this is not always possible.

Therefore please use extreme caution when thinking about using the PC card with hardware; you could waste a lot of money. Your safest bet is to specify that you want a product to work with an Acorn Risc PC 486 card configuration when you order it, then you have a chance of some comeback. A final thought is that the StrongARM chip might be so fast as to remove this problem – 'it's a slim chance Jim, but it might just work'.

Now I don't know if you buy lottery tickets, I certainly don't for many reasons, one of them being that the odds are way out. I have never benefited from any lottery funded projects but I might just. It has recently been announced that there is to be lottery funding for a British Millennium Satellite to be put into low Earth orbit.

The idea is that it will provide an educational resource for schools and other interested parties. It will transmit data and images as well as the results of on board experiments. It is planned that the images could be taken over any part of the Earth and stored for transmission when the satellite passes overhead. My interest of course will be in designing interface equipment for Acorn computers so we can share in the information.

A similar satellite was put up by the University of Surrey about 15 years ago but there was no funding for continued operations and the project eventually fizzled out. This is a trap the current project hopes to avoid. As yet the satellite hasn't even got a name and the organisers are still asking schools to submit an experiment idea to be built professionally. Launch is planned for 1999 and if you are interested contact: Millennium Satellite Centre Ltd., c/o Royal Grammar School, PO Box 289, Guildford GU1 3WY.

Sorry if you have tried to access my web site over the summer but the file server crashed and we lost everything. What is worse they changed the name so even when it got back up people were having difficulty getting it. You are best going through the alias of http://physics.mmu.ac.uk/Physics/Acorn and just a reminder that the capital letters are important.

On to the problems this month, Barney Livingston from Southampton writes:

I have a Star 'Concept Keyboard' for use with my BBC and which I would like to connect to my Risc PC in order to assist my mentally-handicapped sister. This could possibly be achieved through the printer port. The Concept Keyboard also has a 25-way D-type plug and the connections look quite similar to the printer port, so it should be quite simple. It is an A4 keyboard which has 128 touch pads arranged in a 16 by 8 grid.

I can program in BASIC, so I should be able to write any software myself, but I have lost the May 1995 issue of *Acorn User* which contained your article on programming the parallel port.

Barney also sent me a copy of the keyboards pinout, it looks like there should be no problems. However, the May 1995 issue is not the one you want to look at – rather you want to see the Feb 96 issue. I know this was for a digital voltmeter but please bear with me – I am assuming here that this works like a normal scanning matrix keyboard and that the values on the data outputs are constantly changing until a pad is touched. They will then freeze at that pads code and produce a strobe output.

What you need to do is to make up a wire to connect the data bits in your computer to that on you keypad; you will find the computer's pinout in the Welcome Guide. Next wire up the negative strobe on the keypad to the acknowledge line pin 10 of the computer and the system ground to pin 25 of the computer.

Next you have to power your keypad with 5 volts. This was available on the old BBC but not on the new machines. You can tap this voltage from inside the computer or get a separate supply. From the pinout I was sent, this goes to pin 25 of the keyboard. A point to note here: If the two connectors are the same you have to be careful not to get them the wrong way round, therefore you should label each end of the lead. Now you want the software to recognise the strobe as a signal to latched in data. This is where the DVM software comes in; it used the same technique. You should open a file which specifies the parallel port is used to be read by the line:

```
F%=OPENIN"parallel:"
SYS"Parallel_Op",2,&20,&DF
```

After that you can use the BGET command to extract bytes from the keyboard. You can then interpret them how you like.

Barney also has a supplemental:

I want to upgrade my Risc OS 3.5 Risc PC's hard disc to 1GB. I have a limited budget and an IDE CD-ROM drive, so I can only upgrade my current hard disc. I

cannot afford a SCSI card, so I have decided to opt for splitting it into two 512Mb partitions. I have been told that I can do this with the software provided with the computer (possibly !HForm). I would very much like to know if this is possible and if so, how?

As far as I know you can't generate a partition on an IDE drive. The Rapid IDE card from Yellowstone will allow you to do this, as will OS 3.6. I suspect that OS 3.7 will also allow this and it will probably be available by the time you read this.

Mr Barnet has a suggestion for an article:

I saw "It'll Never Work" and on it was an invention which I thought might interest you. Basically it was a device which measured the electrical activity of the brain via a headband. It then found the intensities of the brain's alpha, beta and gamma waves which it used for control purposes.

One example of its use was when they showed a screen containing two boxes labelled 'Switch 1' and 'Switch 2', and Jez Nelson managed to move a pointer over one of the boxes and click on it thus turning a light on and then off. It appears that the intensity of the alpha wave determined the x-coordinate, that of the beta wave the y and the gamma wave caused a click when it reached a threshold. How about trying this for an article?

This one brings back painful memories of 1972 when I constructed a very similar machine – the popular name for this was bio feedback. The idea was that I could use the brain waves and heart beats to generate music by feeding them into an arrangement of sample and hold circuits, voltage controlled oscillators and voltage controlled amplifiers.

The front panel was a huge patch bay where I could interconnect the amplifiers and oscillators. However, I found it impossible to detect any brain activity at all – some might say this is no surprise. The voltages I was picking up were due to minute muscle movement but there is worse to come. In order to get a good connection I had covered my electrodes in a conducting gel obtained from a nurse at the local hospital. Being a lone experimenter I was working on the circuit while wired up to this.

I found out the hard way – if I touched the output of the amplifier which was only carrying a few volts, this would get picked up by the electrodes on my body and cause a feedback circuit, which placed 15 volts across the head electrodes resulting in severe pain. The second time this happened I abandoned the project and I have never been keen to try this again. There is a cardiac monitor experiment on one of the instrumental courses I take and my students have great difficulty building an amplifier that will pick up voltages from the heart. Again muscle movements are a problem – you have to breathe. So therefore, if you don't mind I'll pass on that one.

Philip Ludlam from Bracknell wants to know about the serial transfer. He writes:

My question concerns my BBC Master. I would like to transfer data/programs between that and another BBC B via the RS 423 interface. However I have run into a few problems. The two machines will not communicate, even on 75 baud. The Master appears to send information (after the first 255 characters have gone into the buffer the transfer slows down to about 1 per second when at 75 baud), but the BBC sends the first 255 characters and then halts.

I have checked the lead and it is fine – the connections match and I have managed to transfer data between two BBC Bs, but not between the second B and the Master. I think there's a problem at the Master's end – is it something the do with the *FX calls or configuration? How easily can I transfer files between a A3010 and a PC via the serial link? Is it just a lead or do the two machines use different interfaces? What type of lead/interface would I need?

Communicating through the serial port should be simple, but sadly many times it is not. With only a few wires to play with it is surprising how often it can go wrong. There is nothing much different about the Master than the Model B so it has to be the lead. This applies even to the more modern machines. If a buffer fills up and then freezes, the CTS handshaking line is at the wrong state. This should be wired to the RTS line of the other machine.

Remember on these old machines, just to complicate things, you could plug the serial lead in two ways. The best way to set about serial communications is to just wire up the data lines, data in on one machine to data out on the other. Next, make sure the baud rates are the same on each machine by using *FX7,4 and *FX8,4, and finally, make the word format match to 8 data 2 stop by using *FX156,&F3,&E3. Then issue a *FX3,1 on the sending machine and *FX2,2 on the receiving machine and then on type the sending machine until it freezes. Then you can see which handshaking wire you need to connect to what, as when you get it right the computer unfreezes. Then by typing *FX2,1 on the receiving machine you should be able to get one machine controlled by the other.

The same techniques can apply when using a PC but remember the PC doesn't have any useful *FX commands. The simplest way is to get hold of some simple communications software and use that, as the interface is the same on both machines.

Philip also has two supplementals:

On another note how can I get hold of a leads (from an A3010) and drivers for an Olivetti PC Printer tJP 250) and an Epson LX-850? Secondly, I am going to purchase an A3010 (my first Archimedes). Please explain to me the differences in monitors, as I can only relate to the resolution and maximum number of colours. I am completely baffled by jargon such as AKF 50/53/60/85/95. What are Multi-Sync monitors? What is 0.28dp? Is it the same as .28 dot? How about .26 and .25 dot? What's the difference between AKF monitors, Microvitec and Iiyama? What effect does 14in, 15in and 17in have on the display?

For leads and drivers contact your local dealer or phone around any of the hardware suppliers who advertise in this magazine. As to monitors, it's fairly straightforward when you strip away the jargon. Originally monitors worked on the same standard as a TV set. That is, it took about 64 uS for the spot to travel left to right and 25 mS to travel top to bottom. The monitor was synchronised to the computer using pulse called sync pulses. This standard fixes the number of lines in the Y direction you can have.

There are two things wrong with this when it comes to modern computers. First there are not enough lines for the resolution you want and secondly it's not fast enough to avoid flicker as you are normally viewing a monitor from much closer than a TV set. To address this, computers were made that produced sync pulses at different rates and so the monitor had to be capable of latching onto these pulses hence the name multi sync monitors.

The numbers after the AKF indicate what refresh rate the monitor can use. That is how many times a second the monitor redraws the display. The old TV system had a new screen 50 times a second, from the numbers quoted the monitor can also refresh at up to 95 times a second. The dp (dot pitch) and dot specification mean exactly the same thing, how far the phosphor dots on the screen are apart in mm. The smaller this number the higher resolution you can get on the screen and the crisper it will appear.

As to a 14in display, this is (or should be) the size of the diagonal of the screen; the bigger the number the bigger the picture you will see. This has a knock on effect on the resolution you can see with the same size dot pitch, the bigger the screen the more pixels you can clearly display. Finally AKF is simply the model numbers given by one manufacturer and the other names are other manufacturers. AU

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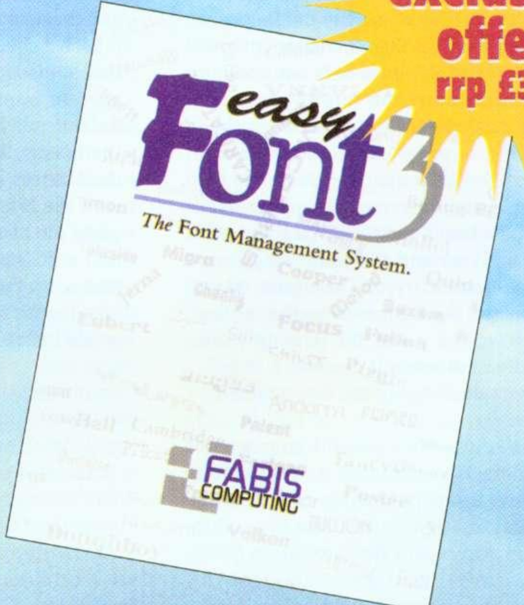
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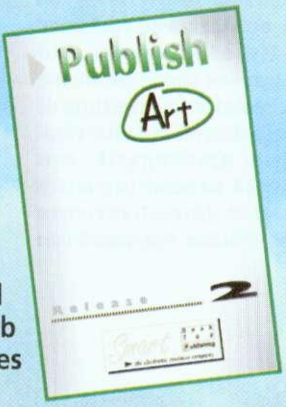


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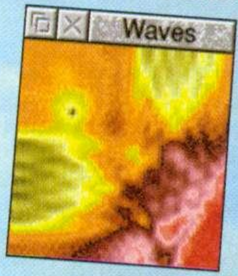
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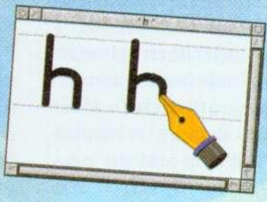
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Re: Bare boards please (June 1996)

In (a slightly late!) response to Christophe Pouet's letter in the June 1996 edition of *Acorn User*, it is indeed possible to buy 'spares' from Acorn – it always has been.

I have a list in front of me: case mouldings, springs, hinges, floppy drives, packaging(!), gaskets, switches, motherboards, processor cards and sometimes you can even buy the RISC OS ROMs (3.50 chips are about £10 each – I don't know about others).

It is Acorn Computers who deal with such orders. If you have a credit account (i.e. are a dealer) you can order direct. Enthusiasts must order through their dealer.

If Mr Pouet is looking for RISC OS 3.6, many folk will have such chips for sale in September when they fit 3.7 chips and their StrongARMs.

Richard Walker,
Stockton-on-Tees

Re: Proper decimal points

I have only just read your June 1996 issue letters page and having made some use of the Alt+keypad combination of late to put symbols into engineering drawings, I was interested to read the letter from D A Cox. I recently bought *Ovation Pro*, and I can assure Mr. Cox that the facility is already there to redefine the decimal tab as ASCII 183.

Having experimented with the decimal tab for a few minutes it looks as though *Ovation Pro* will, by default, recognise both the full stop and the decimal point (183). An unexpected feature of the decimal tab is that when typing in letters these are entered to the left of the tab and the point does not stop this action but the full stop does.

For all those eager to use sexed quotes and proper decimal points, do rush out and buy *Ovation Pro*. It is the sort of software to make you proud to own an Acorn machine.

David Lewin,
DavidLewin@aol.com

DIY CD-ROM drive

I'm sure that many of your readers must have old external 5.25in disc drives left over from their old Beeb days, which probably haven't been used since they transferred files over to their new Archimedes. Here's what I've done with mine:

For some time, I'd wanted to have a CD-ROM drive, but was put off by the high prices quoted by Acorn dealers. I then saw that many PC suppliers were selling Hitachi CDR-7730 IDE Quad speed bare drives for as little as £35 + VAT. I bought one of these, removed the 5.25in disc drive from its case, and fitted the CD-ROM drive in its place. All of the fixing screw holes lined up, and even the power connector was the same.

The next step was to get an interface from Pyramid Computer Services for £28 + VAT, connect everything together, and it worked! A CD-ROM drive and interface for a total outlay of £109.28, which is a huge saving compared with dealer prices for external CD-ROM drives.

I hope this is of benefit to your readers.

Mark Wiggin,
Newport, Shropshire

ters

Branching out

I am a recent convert to the computer world and I started with the Risc PC 600 (against my son's advice), mainly because of the promised PC capability. This has partly been fulfilled but with a few 'features' I hope will be ironed out mainly to do with the serial ports.

My reason for writing is that I find it hard to get coherent information about upgrades available. Both on the hardware route and the software connected with the upgrades.

For example, I have tried hard to find out what and how one can use the seven 'slices' of capacity advertised as available with the basic machine. I asked five people at the Acorn stand at Wembley and none could tell me. Obviously I got the wrong people but I can find nothing in the literature I can get. Even more with the RISC OS software developments, the PC card advances and processors up to StrongARM.

I feel sure that there would be interest in an article that drew a tree with the PC 600 as the base and branched out showing the different routes for upgrades for the Risc PC series that are available according to need.

Mainly because of the queue and time available I did not join the Clan at the first Wembley show after the PC 600 launch. This was a mistake as far as getting information is concerned. For some reason the dealer I bought the machine from did not seem to get any information. (They went in the night of the long knives.) I then, via Acorn, was directed to another dealer who, like the first, was extremely pleasant but I think geared totally to the school market and not interested in anyone who wants to dive a little deeper. I have since joined the Clan and get more information, but there are huge gaps in my knowledge about the progress from the PC600 to 700 and now the StrongARM processor.

I freely admit that if I had been more experienced I might have been able to follow events in the magazines but even going back through the journals I have, I cannot find a coherent pattern in references to upgrading. Acorn themselves have nothing in handbooks that I can get out of them.

I would like to mention how helpful Mike Cook has been. I have a system called *Modemaster* that runs under DOS to decode weather, faxes etc. It depends on a decoder fed from a communications receiver into the serial port. Mike made great efforts to find out more about it, but, in spite of his contacts and very wide experience – I find his range of articles most impressive – has not been completely able to explain the problem. Probably my lack of understanding of the explanation.

It is rather galling as the system will work well on a very old Compaq, literally saved from a dustbin. While my expensive PC600 sits helpless.

John S Bennett,
Boston, Lincolnshire

I think the upgrade problem is that there is no upgrade path, even with processors — apart from get the latest. The seven Risc PC slices can be filled with whatever you find to fill them with, be it additional hard disc drives, CD-Rom drives or computer-controlled toaster. If you don't know what you want to put into the additional slices then you probably don't need them, 99.99 per cent of people don't get beyond two slices.

Windows on PCem?

It said on the October 1996 letters page that Windows 3.11 will run on the *!PCEm* software. I have the MS-DOS 6.22 and Windows 3.1 discs and successfully installed MS-DOS 6.22 which is working fine. I am having problems with installing Windows 3.1 though. I get the message 'Undefined opcode error – system halted'.

When I type:

```
a: setup.exe
```

I get the message 'Program too big to fit in memory'. The same happens when I do this from Windows 3.0. Are you sure Windows 3.1/3.11 can be run on an A5000 with 4Mb of RAM.

Simon Wilson,
101702.1034@
copuserve.com

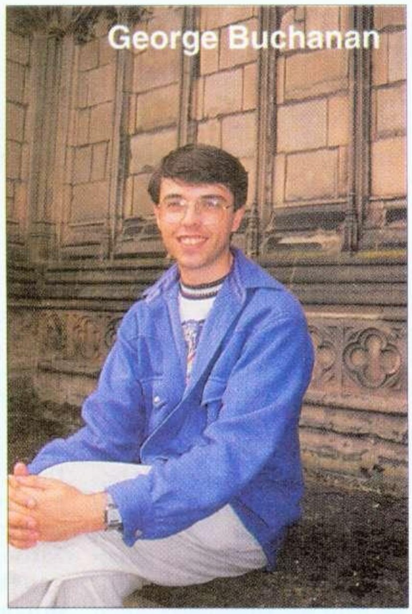
While it's difficult to spot all the things that can be wrong — PCs being flakey at best and the old !PCem is not the stablest of programs — but I would say the problem here is that you haven't allocated enough memory for the emulator itself.

How do you run Windows in the PC Emulator? On my system all I get is 'Windows requires an 286 or higher'.

Alisdair McDiarmid,
a.mcdiarmid
@zetnet.co.uk

The !PCem software emulates an "80186" processor — not that there really was any such beastie — which is why it doesn't like it. I believe you may have rather an old version there and upgrading to a later emulator version might help. Beyond that you'll just have to buy a PC card.

The Regan files



When George Buchanan – the force behind Dalriada Data Technologies – was doing his sandwich year at college, he worked at a seat belt manufacturer. It was July and the plant was nearly shut down as everyone was off on holiday.

Then the phone call came – a manufacturing plant in Europe wanted to know when its next consignment of seat belts was arriving. No one had thought to tell them that the factory effectively shuts down for three weeks in the summer; the European plant was looking straight at three weeks of no work as a result.

George tried to get hold of the bosses, and the personnel manager, but they were all on holiday. Thankfully, he used his initiative:

'Fortunately I knew the personnel system on the computer – because I wrote it. I managed to get the employee list and get in enough people to run one line, and a foreman. It was funny because I had to phone people up and tell them that I didn't know how much they were going to get paid but that I would do my best for them. We did produce enough to tide them over. Imagine it – there was this lad on 7.5k a year running a plant which costs 1.5 million pounds a day to run.'

In other words, George improvises well.

George originally wanted to be a historian, but this changed overnight when he fell upon a book called *Number Predictions and War*. This explains that you can predict the outcome of battles based on historical information, and lots of number crunching.

'I played around on my father's machine, figuring out how to list the programs which were written in BASIC, and from that I learned to program. I changed from a completely arty history student to a rabid mathmo. At school I wrote programs for the BBC which they needed for administration; I was lucky because my teacher encouraged us to write proper programs, not the usual *10 HELLO WORLD, 20 GOTO 10*.'

Proper programs indeed; by the age of 16 he was writing costing systems for Northern Ireland's largest chain of supermarkets, working for printers and doing security systems for banks like Ulster Bank: 'These were nice little earners on the side'. Then came Dalriada.

'At the time people were into naming their companies after Greek and Roman gods and goddesses, so I thought: "Forget that, let's go for a Celtic one," hence Dalriada. Dalriada was in fact an Irish/Scottish kingdom which was supposed to exist from the 4th century AD to 1200 AD'.

'I think you will find that a lot of other companies who set up in the Acorn market the same time as us have gone. This is mainly because they chose to do something which had already been done. *TableMate* was born because I had been using *Impression* a lot and basically *Impression's* tabling was a nightmare. *GraphMate* does have competitors, so it was of utmost importance that we did it differently from other people. The days of re-selling a word processor for the 20th time are over.'

"It is very easy to write something which has lots of features but is a curse to use, or something which does nothing but is easy"

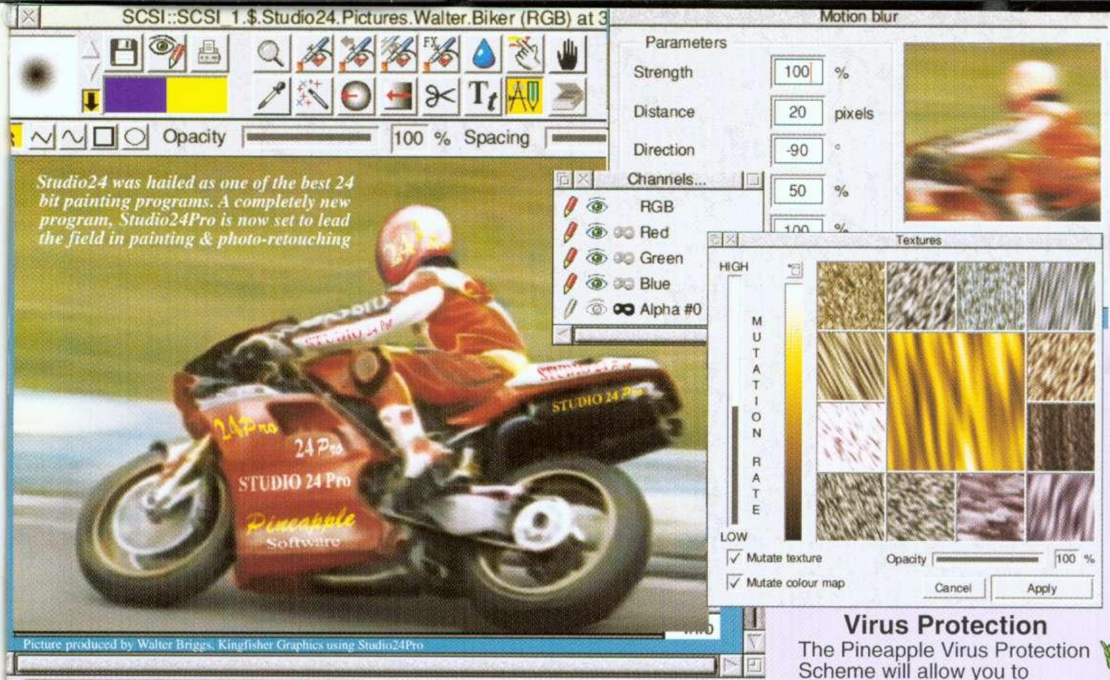
'My philosophy is that just because a program might be used by a 10-year-old who does not want to worry about a GIF file, does not mean you have to compromise professionalism. If you think of a graph, the Y axis is how many things you can do and the X axis is how hard it is to use. It is very easy to write something which has lots of features but is a curse to use, or something which does nothing but is easy. There is a straight line between the two axis and you should curve that out and so get as much as possible for very little work.

'I think the industry as a whole is at a crossroads, and what I do wish is that more Acorn users realised that the changes going on the Acorn world are similar to those in the PC world. Development of all the major programs has slowed down. What we have to do is plough our own furrows, not be a poor-man's PC.

'There *is* going to be an Acorn future: it won't be the same as the past. The changes which are going on – the formation of ART and Xemplar – are making RISC OS like more of a building block.'

In a changing Acorn market, improvising to cope with changed circumstances is an important skill, and George does it better than most.

Jill Regan



Picture produced by Walter Briggs. Kingfisher Graphics using Studio24Pro

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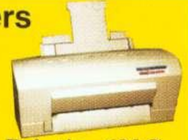
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